

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, MARCH 30, 1889.

No. 13.

ORIGINAL ARTICLES.

THE TREATMENT OF GLYCOSURIA.

Read before the Chicago Medical Society, March 18, 1889.

BY CHARLES W. PURDY, M.D.,
OF CHICAGO, ILL.

It is customary to consider glycosuria under two forms: *First*.—A milder manifestation of the disease in which only small amounts of sugar appear in the urine, and these often intermittently; while the general health of the patient suffers little or no disturbance. *Second*.—A more severe type of the disease characterized by excessively saccharine urine, great thirst, polyuria, emaciation, etc., leading more or less rapidly to extreme marasmus and death. The first form is chiefly of reflex origin, and hence its milder type and rarely fatal termination; while the second form is doubtless of central origin, and consequently more pronounced and serious in its consequences. In a systematic consideration of the management of glycosuria it is important that these two types of the malady be constantly kept in mind.

Physiological chemistry has shown us that glycosuria expresses itself chiefly through disturbance of the glycogenic function of the liver. Claude Bernard extended our knowledge a step farther, and showed that the elemental cause consists of some disturbance of the central nervous system, closely corresponding to the vasomotor centre. All attempts, however, to unravel the nature of this disturbance through the aid of morbid anatomy have proved thus far entirely futile. It is well to remember, however, that in careful scientific research, failure often teaches us valuable lessons, and, indeed, often furnishes useful information. The very fact that the study of morbid anatomy in glycosuria has failed to reveal uniform and tangible lesions of the central nervous system goes far to form a presumption that if lesions exist in these cases they can scarcely be sufficiently grave in themselves to cause fatal results. Our present knowledge of the nature and cause of glycosuria is quite in harmony with this presumption; for indeed we find the cause of such uniformly to depend upon the perverted action of organs widely apart from the brain.

Moreover, if the perverted function of these organs can be corrected and held under control the patient may survive almost indefinitely.

Without entering into the discussion of the many theoretical questions with which, unfortunately, our knowledge of glycosuria is at present so deeply involved, let us more practically inquire, What facts have we at command upon which to base a rational system of managing the disease? We know that the chief expression of glycosuria is a perverted elaboration of the hydrocarbon foods in the liver, resulting in their conversion into grape-sugar. We know that the surcharging of the blood with large quantities of this sugar, not only gravely alters the nutritive qualities of the blood; but it is also liable to induce chemico-toxic changes in that fluid, which are dangerous to life. We know, in short, that the perverted elaboration of so large a proportion of the food supply as that of the hydrocarbonaceous, the saturation of the tissues with the resulting morbid products, and the necessary efforts at their elimination, lead to altered nutrition, emaciation, wasting of the vital forces of the economy, secondary disease of important organs; and to that complex of morbid processes that in glycosuria bring about exhaustion and death. Now, obviously, if we can succeed in cutting off completely the supply of such foods as are prone to faulty elaboration—for the most part the hydrocarbons—we shall not only arrest the perverted liver function; but we shall also save the system from the damaging effects of the morbid products poured into it through faulty elaboration of food, and thus practically arrest the regressive changes that lead to such grave results.

If we had to deal only with the purely hydrocarbon foods as the exclusive source of sugar production in the economy, our problem would be a comparatively simple one; since a thoroughly nourishing and sustaining diet can be furnished exclusive of these. But while the hydrocarbons are the chief, they are not always the only source of sugar production. Experimental investigation has shown that when animals were fed on purely nitrogenous foods—even for lengthy periods of time—a small amount of glycogen still continued to be present in their livers. In the most grave forms of diabetes, the "sugar-forming vice" of the organism

becomes so strong that the liver seems capable of splitting up a portion of the nitrogenous foods, and even of the albumenoids of the tissues, and of transforming a part of these into sugar. Fortunately such cases are for the most part long-neglected or advanced ones. Although much may be accomplished even here in retarding the disease, yet it may, as a rule, be considered progressive towards a fatal termination.

The sugar-forming powers of the organism in glycosuria are feeblest in their operation upon nitrogenous materials; indeed in the early stages of the disease it is probable that these always escape sugar transformation. Next in order come the green parts of certain vegetables, which very strongly resist sugar transformation. The hydrocarbons offer the least resisting power of all foods to sugar transformation, and of this class starch is the most dangerous element.

Practically then the more completely we are able to eliminate the hydrocarbons from the food supply in glycosuria, the more completely will we be able to bring and to hold the disease under control. Certain allowances must be made for individual idiosyncrasies, as well as for a few exceptional articles of diet, which experience has shown us are sometimes well borne—even when their classification would seem to contraindicate their use. To speak more accurately then, the more completely we are able to supply the system with that which it can appropriate as nourishment, and at the same time the more completely we can eliminate that which is convertible into sugar the more successful will be the treatment. Now, in view of the above facts, which I have endeavored to present as carefully separated from theoretical speculations as possible, it seems indeed strange that more earnest efforts are not made in the management of glycosuria—especially in the more pronounced types of the disease—to supply more nearly that diet upon which almost alone depends the improvement or cure of these cases. I shall first point out what seem to me the more prominent errors commonly made in dieting in the severe type of the disease, giving a list of the admissible foods; after which I shall note some of the liberties of diet that may be indulged in the milder reflex forms; and lastly, I shall refer to the influence of drugs over the disease.

First in importance comes the question of bread, some form of which containing starch is permitted in all the diet lists I have seen. Now I do not hesitate to state, without fear of successful contradiction, that all the so-called diabetic flours, breads, and cakes in the market of which I have any knowledge, are loaded with hydrocarbons. They are "a snare and a delusion," and have unquestionably shortened the lives of thousands. Most samples of gluten flour, from which the starch is claimed to have been eliminated—or nearly so—contain from 20

to 40 per cent. of starch. I saw in Dr. Pavy's laboratory in London a few months since an analysis of one of the so-called diabetic flours on sale in our markets, which showed the starch contents to be nearly 60 per cent. Long before I became aware of these facts I found that I could not control typical cases of diabetes if I permitted the use of commercial flours so-called "diabetic." I need scarcely add that with the above figures before me I have discarded them altogether.

The withdrawal of bread from the diet usually constitutes the most serious deprivation the diabetic patient has to encounter, although the appetite for bread is more largely a matter of taste and habit than of necessity. Some patients become quite reconciled to the change after a few weeks and do not mind it, but usually the craving for bread of some kind remains more or less strong, and will not be supplanted by the use of other foods. In the latter class of cases, if strict dieting be demanded, I permit the moderate use of bread made from almond flour as first practiced, I believe, by Dr. Pavy. The almond is absolutely free from starch, but contains about 6 per cent. of sugar. The latter may be eliminated by boiling the meal in acidulated water for an hour or so and then straining it. The almond meal is not on sale in the markets; the large percentage of its contained oil (50 per cent.) renders it unfit for keeping sufficiently long for commercial purposes. In my own practice I direct the meal to be made as required by means of mills especially constructed for the purpose. Almond flour, when beaten up with eggs, may be raised with the aid of a little baking powder, and baked in small tins in an oven, and the resulting bread is relished by most of my patients as equally palatable with ordinary bread. It should be borne in mind that almond bread, as indeed all substitutes for common bread, should be used in moderation; otherwise patients deprived of other luxuries of food fly to the permitted bread with an avidity seemingly born of the thought that it is indeed the "staff of life" instead of merely a substitute therefor. To make a substituted article of diet go further than the original one is more than is to be expected, even in these practical days, and yet I am led to believe that the failure in accomplishing this in the case of almond bread has led to its unjust condemnation by some in these cases.

The next question of importance in diet—and one upon which authorities greatly differ, is the propriety of the use of milk in diabetes. Dr. Donkin, perhaps the most enthusiastic advocate in its favor, published a book in 1871, which was devoted to the exclusive use of milk as a means of treating this disease. In England Dr. Donkin's so-called "milk cure" has met with few, if any weighty supporters; on the contrary, many advocate the total exclusion of milk from the diet. My own experience in the use of milk in

the treatment of diabetes began nine years ago since which time I have made thorough and varied trials of it, both as an exclusive and as an adjunct diet. My conclusions are that milk is successful chiefly—perhaps only—in milder forms of the disease, such as I have termed reflex cases. Such cases are, as a rule, controllable by moderate limitations of diet, which offer greater range and nutritive power than does milk. In the more severe type of the disease I have repeatedly found when the diet was rigidly restricted, save in the use of milk, that the total exclusion of the latter without other change caused a prompt reduction, and often the disappearance of sugar from the urine.

Milk contains a very considerable amount of sugar (lactine), about half an ounce to each pint, and Dr. Pavy observes that this animal hydrocarbon "comports itself in the intestinal canal precisely as does grape-sugar." There can be little doubt, therefore, that in the more pronounced type of diabetes requiring a strict diet, milk should be excluded from the list.

There is a form of glycosuria that occurs in obese and over-nourished subjects, in which the amount of sugar in the urine is usually small, and probably largely due to the ingestion of more hydrocarbons than the system is able to appropriate. Such cases are benefited, and indeed often cured, by a course of fasting. The "milk cure" consisting of the exclusive use of skimmed milk is likely to benefit such cases because it is, in fact, a system of starving.

Skimmed milk alone is not sufficient to long maintain proper nourishment to the organism. In pronounced diabetes of central origin, where the assimilative powers of the system are weakened, and more or less emaciation has already set in, it would, therefore, seem absolute folly to confine the patient to skimmed milk, for under such circumstances death from inanition must be but a question of a short time. Sir Wm. Roberts records three cases which he subjected to the "milk cure" with the result that they all succumbed in a short time. My own experience is similar to Dr. Roberts', save that I ceased to use it as an exclusive diet after seeing my first patient rapidly sink under its employment. It is important to bear in mind that lactine is confined to the whey, and consequently the other derivatives of milk—as cheese, cream, curds and butter—are unobjectionable.

Another food of animal source contraindicated in diabetes is liver. The liver of animals contains considerable sugar, as might be expected, considering the glycogenic function of that organ. Not only should the liver of quadrupeds be avoided, but certain fish, especially oysters and the interior of crabs and lobsters, since they possess proportionately very large livers. It has been claimed that this precaution is more in keeping with theory than practice, but a sufficient answer is fur-

nished in the fact that analyses of oysters have shown as high a range as 10 per cent. of sugar.

The very wide distribution of starch and sugar throughout the vegetable kingdom renders our selection of food from this source limited indeed. In strict dieting we are obliged to avoid nearly the whole list of table vegetables. One class only are we at all safe in drawing upon—greens—and these with caution. Green vegetables fortunately consist mostly of cellulose and contain little, sometimes no starch or sugar. They are rendered still safer if boiled before being eaten; the hot water further ensuring the absence of starch and sugar.

The starch and sugar composition of vegetables varies somewhat. This variation depends much upon the degree of cultivation, and the nature of the climate and soil in which they are produced. As a rule, a high degree of domestic cultivation favors an increase of starch and sugar, while high temperature and sunny skies have an opposite tendency. Among the least objectionable vegetables may be mentioned spinach, lettuce, olives, cucumbers, mushrooms, Brussels sprouts, turnip tops, water-cresses, cabbage, cauliflower, and the green ends of asparagus. Nearly all nuts are unobjectionable, chestnuts forming an exception.

In the matter of beverages the diabetic patient will scarcely encounter very serious restrictions, since the range permitted includes most of those in domestic use, including many which fall within the line of luxuries. Among these may be mentioned tea, coffee, all mineral waters, pure spirits, as brandy, whisky, gin, and such wines as claret, Rhine wine and Burgundy.

Having briefly reviewed the food products applicable in glycosuria, I shall now enumerate the list I employ in dieting patients upon strict principles, as appropriate in the more severe type of true diabetes of central origin.

STRICT DIABETIC DIET.

Meats of all kinds except livers; beef roasted, broiled, dried, smoked, cured, potted, or preserved in any way except with honey, sugar, or prohibited vegetables. Mutton, ham, tongue, bacon, sausages. Poultry and game of all kinds. Soups made from meats, without flour or prohibited vegetables. Eggs, butter, cheese, pure cream, curds, oil, gelatine and unsweetened jellies. Fish of all kinds except oysters and the inner parts of crabs and lobsters. Bread, biscuits, and cakes made from almond flour. Spinach, lettuce, olives, cucumbers, mushrooms, water-cresses, green cabbage. Almonds, walnuts, Brazil nuts, filberts, butternuts, cocoanuts. Salt, vinegar and pepper.

Drinks, tea and coffee, mineral waters, whisky, gin and brandy, in moderation. Claret and Rhine wine.

In mild forms of glycosuria some additions may be safely made to the above diet, and often with advantage. Since in such cases the sugar-forming

powers of the organism are weaker ; or, in other words, the assimilative powers for sugar and starch are greater, it is only necessary to limit, *not to curtail* the hydrocarbons. It seems necessary, therefore, to have at hand to draw upon a supplementary list of foods, which contain but limited amounts of these agents. The selection from the supplementary list should always be made with care ; indeed, it should be almost as much a matter of experiment as rule, since we encounter wide differences in individual cases. Thus levulose—fruit sugar—is often well assimilated in the milder form of the disease, and this permits the inclusion of certain fruits in the supplementary list.

SUPPLEMENTARY DIET.

Cabbage, celery, radishes, cauliflower, green string beans, coldslaw, kraut, young onions, tomatoes, cranberries, apples if not sweet, milk in moderate quantities, and bran bread or gluten bread well toasted.

The discovery of saccharin has furnished us an admirable substitute for sugar, since this agent possesses a sweetening power nearly 300 times greater than that of sugar, and a flavor quite as agreeable and pleasant. The tablet form in which saccharin is now put up is very convenient for sweetening coffee, tea, and other beverages. Constant use of saccharin in practice for over a year has convinced me that it is entirely harmless in these cases.

The method of dieting diabetic patients is of scarcely less importance than the quality of the diet itself. In order to more accurately determine the effects of diet upon the disease, no so-called specific medicines should be administered until the sugar excretion is reduced as far as is possible by diet alone. Step by step the more objectionable foods should be cut off until sugar ceases to appear in the urine, or until we reach almost—indeed in some cases an absolute—animal diet. Of course, where patients have been enjoying all the luxuries of a diet range comprising our modern resources of food-supply and culinary arts, an abrupt change to a strict diabetic diet would carry with it more or less danger, and therefore such course is never advisable. *The first step* should consist in the exclusion of potatoes, sugar, and farinaceous foods, except leaving the patient the liberty of using a moderate amount of bread thinly cut and well toasted on both sides. With these restrictions the patient should continue without other changes for about two weeks. In the milder cases this "first step" in dieting will have caused a reduction of the sugar in the urine to relatively small proportions ; indeed, in some cases it completely vanishes. If sugar still appears in the urine—especially if in considerable quantities—under the above restrictions, we may know that the disease is at least of moderately severe type, and we should proceed to the next step in the diet.

This should consist in the exclusion of milk, and all vegetables save green ones. Greater care should be exercised in the use of bread ; white bread should be forbidden, and some substitute employed that contains less starch. Gluten or bran bread may be tried, but always toasted, as this alters its contained starch, so that it is not so readily converted into sugar.

After two weeks' adherence to the above restrictions, if sugar still appears in the urine beyond mere traces, we may be sure that we have to deal with the disease in its more severe type, and we must accordingly bring to bear against it all our resources of diet in the most strict form. Everything containing starch or sugar that can be avoided, should be strictly forbidden. This last step should be entered upon rather more gradually than the others. Milk, if previously permitted, should now be replaced by pure cream. Cabbage, celery, radishes and string beans should be exchanged for spinach, lettuce, water-cresses, olives and cucumbers. Lastly, apples, tomatoes and all fruits should be avoided, and, with the exception of almond bread, some nuts and a few greens, the patient is reduced to an animal diet. Upon these restrictions, properly carried out, we shall find a large proportion of diabetic patients cease to excrete sugar with their urine, and with this result nearly all the symptoms of the disease will disappear.

In exceptional cases, even after a fair trial of the above restrictions sugar still appears in the urine, but it rarely exceeds 1 per cent. Under such circumstances the patient should be placed upon an absolutely animal diet, at least for a time. It will be found that a strictly animal diet will often remove these last traces of sugar from the urine, and after its continuance for a longer or shorter time, a reversion to some of the less objectionable articles of the vegetable order causes no reappearance of sugar in the urine.

In accustoming the patient to the more strict form of diet, care should be exercised not to permit the stomach to be overloaded. The beneficial effects of temperate eating in glycosuria were very prominently illustrated during the siege of Paris, as Bouchard observed that sugar entirely disappeared from the urine of diabetics in whom up to that time it had persisted, even though they had been living on a carefully regulated diet. The diminution in the quantity of food, occasioned by its great scarcity during the siege, effected that which alteration in quality had failed to accomplish.

The more slowly food is submitted to the digestive forces, the more completely is it likely to become assimilated. Light meals frequently repeated is the better rule to follow, at least until the patient becomes accustomed to the change. It is important also that the diet be varied as greatly from day to day as the range of food in the list will permit.

I have repeatedly placed diabetic patients that were considerably under 20 years of age upon the strict lines of diet herein indicated, with the result of completely eliminating the sugar from the urine for weeks and months together, and without resort to medication. Thus it may be seen how much may be expected from proper dieting, even in cases that we are forced to consider as ultimately hopeless ones.

By way of illustration—a year ago this month a lad of 18 years came to me from a distant State with a history of diabetes of over a year's standing. His symptoms, as is usual in such cases, were great thirst, morbid appetite, polyuria, and advancing emaciation, with a very considerable amount of sugar in his urine. His physician at home had put him upon a diet scarcely so limited as the "first step" laid down in this paper, and but a slight check was put upon the disease. I gradually restricted his food allowance until it conformed to the strict diabetic diet already laid down. His thirst gradually subsided, the quantity of urine diminished, and at the end of six weeks no trace of sugar was to be found in his urine, and he began to regain his lost weight. Under a continuance of this course the urine remained normal in quantity and free from sugar for about three months, when he returned to his home with directions to follow as closely as possible the course that had so greatly benefited him. This case may be fairly ranked among the most unpromising ones, chiefly on account of the patient's age; for it is a rare exception to meet with a case under 20 years of age in which the disease does not rapidly prove fatal unless the patient be very strictly dieted.

It may be said of glycosuria in general that its severity is usually in inverse ratio to the age of the patient. The youngest diabetic I have seen came under my care a short time since, in the person of a little boy 3 years and 2 months old. In this case the polyuria was so pronounced that a nurse had to be provided to attend him at night, as he "wet the bed" from six to eight or more times each night. It may be of interest to note that he was put upon an animal diet, including milk, which soon lessened his polyuria so that the patient did not urinate during the whole night. I believe milk is more easily assimilated by children than by adults; at any rate it seems to agree better with them in these cases; and this is very fortunate, since we are almost driven to its use in diabetics of tender age. As a rule, in patients under middle age, we shall be obliged to bring to bear against glycosuria all our resources of dieting in the more strict form. I have met with an exception to this rule in the case of a Jewess, 29 years of age, in whom moderate restrictions of diet have kept the urine practically free from sugar for the past year and a half, only exceptional traces having appeared

occasionally. It has been remarked by several observers that diabetes is frequent among Hebrews, and that in them the disease is always of mild form. My own experience tends to confirm the latter statement. I have, indeed, at the present time, three cases in Hebrew women under treatment, and they are all of mild form.

For the most part the milder forms of glycosuria are met with in people that have passed the age of 40 or 50 years. In this class of cases our resources against the disease are always more effective; indeed, one or two years careful dieting not infrequently leads to permanent cure.

It remains, to speak of the medicinal treatment of glycosuria, and I may as well state frankly at the beginning that I have little faith in the curative power of medication over the disease, while on the contrary I am satisfied that the use of drugs in these cases is often productive of harm. My conclusions upon this point have been reached through separating the dietetic from the medicinal treatment, and then comparing the results of each. When a system of diet and medication are employed together from the beginning, the benefits accruing from diet may be attributed to the medicines, while the unfavorable influence of medication may be attributed to the disease. Our faith has become so supreme in the efficiency of medication in these days, that we are apt both to permit ourselves to be misled in its favor, and to overlook its possible injurious effects.

Of the various drugs that have been recommended in glycosuria, opium, perhaps, maintains its reputation best and has become the most popular. Opium undoubtedly tends to restrain the excretion of sugar in these cases, but the doses necessary to accomplish this result are so large that the drug is likely to induce constipation and impaired digestion, and thus any good accomplished through its use is more than counterbalanced by resulting evil. I have recently gone over this ground very carefully in a series of trials systematically conducted. Three cases were selected, in each of which the sugar excretion had been reduced by strict diet to about 1 per cent. They were all typical cases of true diabetes of central origin; and no little pains had been expended in reducing the sugar to so small a percentage, and maintaining a good general condition with excellent digestion and assimilation. Under gradually increasing doses of opium the sugar excretion was reduced somewhat in all the cases, but sooner or later constipation, loss of appetite, or nervous disturbances compelled the discontinuance of the drug without exception. This has always been my experience in the use of opium in glycosuria; nor have I found any material advantage in the use of morphia, its bimeconate, or the use of codeine. They all comport themselves much the same as does opium when used in equal physiological doses.

Ergot is probably the next most popular drug employed in the treatment of glycosuria. In the necessarily large doses required to effect the disease it is unsuitable for lengthy periods of administration. Its controlling power over glycosuria is very feeble and uncertain, and on the whole it may be regarded as unworthy of much confidence.

Bromide of arsenic and syzygium jambolanum have recently been highly lauded in the treatment of glycosuria. I have known the former to be administered in the largest doses (25 drops Gilliford's solution), during which time the patient continued to excrete urine that contained 30 grains of sugar to the ounce. Upon withdrawing the bromide of arsenic and placing the patient upon a restricted diet, I had the satisfaction of seeing the sugar speedily reduced to $2\frac{1}{2}$ grains to the ounce. I have administered jambol to a number of my patients, but without noticing any favorable change that I could fairly ascribe to its use. A number of other drugs have been more or less highly extolled for their alleged specific influence over glycosuria. Among these may be mentioned iodoform, bromide of potassium, iodide of potassium, arsenic, sodium phosphate, nitrate of uranium, salicylic acid, picric acid and Calabar bean. There does not, however, appear to be sufficient evidence in favor of any one of these to entitle it to any degree of confidence. Carefully discriminated from the benefits derivable from dieting, these drugs are probably nearly inert so far as their influence over glycosuria is concerned.

The legitimate field of therapeutics in glycosuria becomes practically narrowed down to the treatment of its accompanying symptoms, and upon this point but few words will be here added. It has already been stated that disordered digestion is so frequent in glycosuria as to constitute it an accompanying rule. Indeed, many of the milder cases owe their origin without doubt to this cause. The digestive and assimilative functions should therefore receive especial support through such agents as experience has taught us prove the most efficient. Among these may be mentioned, pepsin and the vegetable bitters—and especially strychnia. The latter I have come to regard with increasing favor.

Constipation, so frequent an accompaniment of glycosuria, should be especially guarded against, as this condition reacts very markedly in enfeebling the digestive and assimilative powers. I have an especial preference for the natural alkaline purgative waters to meet such requirements, since they relieve the over-acid condition of the intestinal canal so common to the disease. Friedrichshall or Sprudel—or the salt made by the evaporation of the latter—given before breakfast, in hot water, seem especially appropriate. In middle-aged people inclined to stoutness and over-eating, a course of purgation by either of these agents often proves highly beneficial.

The various nervous disturbances accompanying glycosuria are, on the whole, perhaps best met by the use of bromides—especially that of sodium or lithium. It is not uncommon to meet cases of glycosuria complicated by anæmia. When pronounced, this condition is frequently attended by œdema of the extremities, and under such circumstances the liberal use of iron and arsenic is attended by excellent results. The appearance of multiple boils is not uncommon in glycosuric patients; a complication generally considered ominous of approaching danger. I have seen a disappearance of this complication in two weeks under the use of quinine—8 to 10 grs. daily—after having resisted other measures for nearly three months.

The most dangerous, and certainly the most rapidly fatal, of all the complications of glycosuria is that of Kussmaul's coma—sometimes called acetonaemia. Since the treatment of this complication has thus far proved so unsatisfactory, a knowledge of the conditions commonly leading thereto should be borne in mind, in order to guard the patient against it. Constipation, mental emotion, and fatigue seem especially to predispose to this complication, while a highly acid state of the urine often precedes it. I have repeatedly, in these cases, observed sudden death by coma to constitute the penalty of a hunting expedition, or long railway journey entailing unusual fatigue. If the early indications of approaching coma are observed, stimulants and hot baths should be resorted to without delay. It is believed that diabetic coma is brought about by some toxic agent in the blood, perhaps derived from alcoholic fermentation of glucose. Whether this be acetone, or some other agent, we are warranted by certain facts in believing that it is of an acid nature and, therefore, large doses of alkalies seem the most appropriate remedies to employ. An ounce of tartrate or citrate of soda dissolved in a pint of water may be given three or four times a day. The intravenous injection of sodium carbonate, with chloride of sodium, is strongly advised if coma has already become established. Under the latter circumstances, however, recovery is extremely rare under any form of treatment. On the whole, then, promising results are only to be expected by attempts at warding off the attack through such measures as have already been suggested.

In concluding what has been intended as a practical review of the management of glycosuria, it seems desirable to emphasize the immense importance of careful dieting as greatly outweighing all our other resources combined. This fact should be strongly impressed upon the patient from the beginning. He should be taught to rely little upon medication, and the most effective means of doing this is to show him how much can be accomplished by careful dieting alone. When he

has once learned through experience that the amount of sugar in his urine always bears a direct ratio to the prohibited foods indulged in, he is less likely to overstep the proper limits imposed. With his thirst, polyuria, and other discomforts relieved—a sure sequence of careful conformance to the rules—unless he be greatly lacking in intelligence and gratitude, he will cheerfully submit to the conditions imposed, since he will see and feel how greatly he is indebted to them.

163 State St., Chicago.

AN INTRODUCTION TO THE STUDY OF PNEUMONIC FEVER.

BY EDWARD F. WELLS, M.D.

FOURTH PAPER.—PREVALENCE.

Pneumonic fever "is one of the severest, most common, and in cold and temperate climates, is productive of more deaths than any other acute disease,"¹ and "is, next to phthisis, the greatest enemy of mankind."

The prevalence of a disease may be studied in various ways, *e. g.*, by considering; α . the annual mortality in relation (1) to the population, (2) to the deaths from all causes and (3) to the deaths from certain specified causes, and β . by comparing the annual mortality to (1) the population, (2) to that from all causes and (3) to that from specified causes.

Pneumonic fever is responsible for an annual mortality of 1.27 per 1000 of population. This estimate differs somewhat from those arrived at by Sanders,³ 1.38; Hirsch,⁴ 1.49; Ziemssen,⁵ 1.53, and Osterlen,⁶ 1.85. Inasmuch, however, as the magnitude of the figures with which I deal is much greater than that of either of these statisticians and are derived from a wider field, I am persuaded that my results approach nearest the truth. It is also the cause of 7.1 per cent. of all deaths. Sanders' estimate is 5.9 per cent., Juergensen's⁸ 6.6 per cent., and Paton's⁹ 17 per cent!

The following table shows the material from which my estimate has been derived. The magnitude of the numbers employed, the wide distribution of the points of observation, and the number of years embraced in the calculation will go far towards eliminating those errors incidental to all statistical inquiries.

TABLE III.—SHOWING PREVALENCE OF PNEUMONIC FEVER.

LOCALITY.	Years.	Population.	Deaths. All Causes.	Pneumonic Fever.	Per cent.	Per 1,000.
Alabama ¹⁰	1	1,262,505	17,919	1,748	9.7	1.38
Africa ¹¹					9.1	3.62
Algiers ¹²	6					2.10
America ¹³						1.20
Antilles ¹⁴	20					1.30
Arizona ¹⁵	1	40,440	291	30	10.3	.75
Arkansas ¹⁶	1	802,525	14,812	1,952	13.2	2.43
Asia ¹⁷						1.43
Atlantic Steamers ¹⁸	4		412	47	11.0	
Australia ¹⁹						.72
Austro-Hungary ²⁰						2.42
Baltimore ²¹	29	417,000	15,722	1,028	6.5	1.13
Bavaria ²²	5					2.20
Belfast ²³	9					.44
Belgium ²⁴	3					.85
Belleville, Ont. ²⁵	14	9,742	537	20	3.7	.63
Bengal ²⁶	14					1.40
Berlin ²⁷	50					1.21
Bermuda ²⁸	10					.60
Bombay ²⁹	3					.40
Boston ³⁰	42		7,995	321	5.3	1.23
Brantford, Ont. ³¹	5	11,833	484	44	9.0	1.27
Breslau ³²	10					1.20
British Army ³³	2					.86
Brooklyn ³⁴	1	500,000	11,011	858	8.0	.71
California ³⁵	1	864,694	6,396	641	10.0	1.74
Canada ³⁶	20					1.32
Cape Colony ³⁷	19					.70
Cape Town ³⁸	10					1.00
Central America ³⁹						1.82
Ceylon ⁴⁰	20					.70
Charleston ⁴¹	5	49,984	1,768	65	3.6	1.30
Chicago ⁴²	2	400,000	15,924	870	5.5	1.09
Christiana ⁴³	1	75,000		116		1.54
Cincinnati ⁴⁴	20	230,000	104,752	7,093	6.7	1.54
Cleveland ⁴⁵	2	160,000	7,366	421	5.7	1.41
Colorado ⁴⁶	1	194,237	2,078	373	18.0	1.92
Connecticut ⁴⁷	10	622,700	106,883	7,177	6.6	1.15
Copenhagen ⁴⁸	32					1.71
Cork ⁴⁹	9					.46
Cuba ⁵⁰						1.40
Dakota ⁵¹	1	135,177	1,304	110	8.4	.81
Delaware ⁵²	1	104,130	1,302	87	6.6	.83
Denmark ⁵³						1.57
Denver ⁵⁴	1	35,629	469	67	14.3	1.85
Dist. of Columbia ⁵⁵	3	177,624	11,476	1,091	9.0	2.05
Dresden ⁵⁶	10					.40
Dublin ⁵⁷	9					.81
Edinburgh ⁵⁸	3					1.42
England ⁵⁹	11					1.25
Europe ⁶⁰						1.57
Florida ⁶¹	1	269,493	3,159	209	6.6	.74
Faroe Islands ⁶²						.71
France ⁶³						1.90
French Army ⁶⁴	18					3.0
Georgia ⁶⁵	1	1,542,180	21,548	1,685	7.8	1.09
German Army ⁶⁶	9					12.3
Germany ⁶⁷						1.34
Germersheim Garrison ⁶⁸	26		314	24	7.6	.40
Guelph ⁶⁹	3	10,190	484	21	4.3	.63
Geneva ⁷⁰	4					1.30
Ghent ⁷¹	10					1.21
Gibraltar ⁷²	10					.70
Halle ⁷³	10					2.29
Hamburg ⁷⁴	19	180,000	9,661	321	3.3	1.80
Hamilton ⁷⁵	3	39,216	2,228	122	5.4	1.13
Hartford ⁷⁶	6	45,000	6,019	449	7.5	1.66
Iceland ⁷⁷						.79
Idaho ⁷⁸	1	32,610	323	35	10.8	1.09
Illinois ⁷⁹	2	2,572,000	58,478	5,618	9.6	1.48
Indiana ⁸⁰	4		74,031	6,692	9.0	1.60
Ionian Islands ⁸¹	10					.60
Iowa ⁸²	1	1,624,000	19,377	1,615	8.1	1.00
Ireland ⁸³	9					.27
Italy ⁸⁴						1.85
Jamaica ⁸⁵	20					.30
Kansas ⁸⁶	1	906,000	15,160	1,447	9.0	1.60
Kentucky ⁸⁷	1	1,648,932	20,930	1,671	8.0	1.09
Kingston ⁸⁸	3	15,297	924	49	4.3	.87
Knoxville ⁸⁹	1	9,000	165	16	9.0	1.55
Leith ⁹⁰	3					1.50
Limerick ⁹¹	9					.60
London ⁹²	17					9.169
London, Ont. ⁹³	3	20,970	998	70	6.2	.90
Louisiana ⁹⁴	1	723,856	8,905	1,132	12.7	1.56
Madras ⁹⁵	10					.70
Maine ⁹⁶	1	648,936	9,523	795	8.3	1.08
Malta ⁹⁷	13					.50
Marquette ⁹⁸	7					5.80
Maryland ⁹⁹	1	602,630	8,751	681	08.0	1.13
Massachusetts ¹⁰⁰	24	1,123,425	122,402	8,106	6.6	1.35
Memphis ¹⁰¹	1					2.50

¹ Laennec, *Traité de l'Auscultation Médiate*, Paris, 1819.

² Juergensen, *Ziemssen's Handb. d. Spec. Path. u. Therap.*, Leipzig, 1877, Bd. v. S. 12.

³ *Am. Jour. Med. Sci.*, July, 1882, p. 83.

⁴ *Handb. d. Geog. u. Hist. Path.*, Erlangen, 1864, Bd. ii, S. 21.

⁵ *Präger Vierteljahrschr.*, 1858, S. 11.

⁶ *Handb. d. Med. Statistik*, Tübingen, 1874, S. 377 u. 566.

⁷ *Op. cit.*, p. 83.

⁸ *Ziemssen's Handb.*, Bd. v., S. 12.

⁹ *Am. Jour. Med. Sci.*, Oct., 1870, p. 375.

TABLE III—CONCLUDED.

LOCALITY.	Years.	Population.	Deaths. All Causes.	Pneumonic Fever.	Per cent.	Per 1,000.
Michigan ¹⁰¹	2	1,520,597	28,122	1,642	5.8	.80
Milwaukee ¹⁰²	2	120,000	4,045	210	5.5	.90
Minnesota ¹⁰³	1	692,413	8,114	405	5.0	.58
Mississippi ¹⁰⁴	1	1,131,116	14,583	1,783	12.2	1.57
Missouri ¹⁰⁵	1	1,762,077	28,953	3,850	13.3	2.18
Montana ¹⁰⁶	1	39,159	336	32	9.5	.82
Montreal ¹⁰⁷	1	183,000	4,665	187	4.0	1.02
Nebraska ¹⁰⁸	1	452,404	5,930	417	7.0	.92
Netherlands ¹⁰⁹	1	62,666	728	147	20.2	2.36
Nevada ¹¹⁰	1	62,666	728	147	20.2	2.36
New Archangel ¹¹¹	5					1.10
New Brunswick ¹¹²	10					.30
Newfoundland ¹¹³	2					1.32
New Hampshire ¹¹⁴	10	346,991	11,784	917	7.7	1.20
New Haven ¹¹⁵	10		1,228	75	6.0	1.10
New Jersey ¹¹⁶	3	812,855	38,796	1,859	4.8	1.10
New Mexico ¹¹⁷	1	119,565	2,436	160	6.5	1.34
New Orleans ¹¹⁸	3	200,000	21,520	954	4.4	1.59
New York ¹¹⁹	20	5,062,122	245,556	17,693	7.2	1.03
New York City ¹²⁰	36	1,206,299				2.03
Norway ¹²¹	1	1,756,965	29,417	872	2.9	.50
Norway and Sweden ¹²²	1					1.60
North America ¹²³	1					6.1
North Carolina ¹²⁴	1	1,399,750	21,547	1,280	5.9	.91
Nova Scotia ¹²⁵	10					1.10
Ohio ¹²⁶	1	2,742,315	32,277	2,074	6.4	.75
Ontario ¹²⁷	14	1,800,000	245,759	13,198	5.3	.51
Oregon ¹²⁸	1	174,768	1,864	89	4.8	.51
Ottawa ¹²⁹	3	30,791	3,185	113	3.5	1.20
Paris ¹³⁰	26					2.56
Pennsylvania ¹³¹	1	3,111,522	41,294	3,021	7.3	.97
Petersburg ¹³²	1	21,000	506	36	7.0	1.75
Philadelphia ¹³³	48	750,000	64,579	4,086	6.2	1.30
Pittsburgh ¹³⁴	7	170,000	30,086	2,311	7.6	1.65
Providence ¹³⁵	23	100,000	14,542	2,017	7.2	1.50
Rhode Island ¹³⁶	16	276,531	59,258	3,773	6.4	.90
Richmond ¹³⁷	3	60,000	4,752	229	5.1	1.29
Rochester ¹³⁸	2	80,000	3,037	145	5.5	.90
Russia ¹³⁹	1					1.05
San Antonio ¹⁴⁰	1	45,000	775	15	1.9	.33
Sandwich Islands ¹⁴¹	1					2.0
San Francisco ¹⁴²	1	200,000	4,436	326	8.0	1.63
Savannah ¹⁴³	16		9,512	470	5.2	1.70
Selma ¹⁴⁴	1	6,000	100	12	12.0	2.00
Scotland ¹⁴⁵	18					.73
Sierra Leone ¹⁴⁶	1					.50
South America ¹⁴⁷	1					1.61
South Carolina ¹⁴⁸	1	945,593	13,870	1,059	7.6	1.12
St. Catharines ¹⁴⁹	3	9,931	501	35	7.0	1.13
St. Helena ¹⁵⁰	6					.80
St. Louis ¹⁵¹	3	400,000	23,645	1,508	6.3	3.77
St. Paul ¹⁵²	1	125,000	1,519	97	6.3	.77
St. Thomas ¹⁵³	3	10,811	297	23	7.8	.97
Switzerland ¹⁵⁴	1					1.50
Tennessee ¹⁵⁵	1	1,499,009	24,529	2,118	8.6	1.41
Texas ¹⁵⁶	1	1,591,749	25,030	2,514	10.4	1.59
Toronto ¹⁵⁷	3	105,211	6,598	434	6.6	1.39
Turin ¹⁵⁸	10					2.20
United States ¹⁵⁹	1	50,155,783	756,893	63,625	8.4	1.26
U. S. Army ¹⁶⁰	2		71,192	7,091	10.0	. . .
U. S. Marine ¹⁶¹	6		2,818	256	9.1	. . .
Utah ¹⁶²	1	143,963	2,414	295	12.2	2.06
Vermont ¹⁶³	1	332,286	5,024	496	9.8	1.49
Virginia ¹⁶⁴	1	1,448,965	23,507	1,807	7.7	1.24
Washington ¹⁶⁵	1	75,116	755	59	7.9	.71
West Virginia ¹⁶⁶	1	618,457	7,418	432	5.8	.70
Wisconsin ¹⁶⁷	1	1,199,910	13,652	939	6.9	.78
Würzburg ¹⁶⁸	4					1.50
Wyoming ¹⁶⁹	1	20,789	189	18	9.5	.90
Zürich ¹⁷⁰	23		29,147	2,581	8.8	2.05
Total and averages			2,745,985	196,568	7.1	1.27

¹⁰ U. S. Census Reports, 1880.
¹¹ Chamberlain, N. E. Med. Mon., June, 1883, p. 406; Sanders, Am. Jour. Med. Sci., July, 1882.
¹² Laveran, Mal. des Armées, Paris, 1875.
¹³ Sanders, op. cit.
¹⁴ Tulloch, Brit. Army Rpts., 1838. For Negroes it is 3.90.
¹⁵ U. S. Census Reports, 1880.
¹⁶ Ibid. ¹⁷ Sanders, op. cit.
¹⁸ U. S. Marine Hosp. Serv. Reports.
¹⁹ Sanders, op. cit.
²⁰ Sanders, op. cit. According to U. S. Census Rpts., 1880, 2.96%.
²¹ Niles and Russ, Med. Statist., etc., N. Y., 1827, 1816-26; Joyne, Am. Jour. Med. Sci., Oct., 1850, p. 297, 1836-1850; Frick, Am. Jour. Med. Sci., Oct., 1855, p. 312, 1850-55; Rpt. Bd. Health, 1878-1886.
²² Klinger, Lungenk. in Bayern, 1874. Sanders gives it 1.40.
²³ Ziemssen, Prager Vierteljahrschr., 1858.
²⁴ Sanders, op. cit. In two of the largest cities the rate was 1.74.

²⁵ Ontario Reg. Rpt. 1883-4-5.
²⁶ Gordon, Med. Times and Gaz., Aug. 1856, p. 188.
²⁷ Hirsch, Handb. d. Hist.-Geog. Path., Erlangen, 1864, Bd. ii, S.
²⁸ Pulvermacher, Inaug. Diss., Berlin, 1882.
²⁹ Tulloch, Army Reports, 1853.
³⁰ Kinnis, Edinb. Med. and Surg. Jour., Vol. lxxvi, p. 256.
³¹ Shattuck, Am. Jour. Med. Sci., April, 1841, p. 369; Ziemssen, l. c.
³² Ontario Reg. Rpt., 1883-84-85.
³³ Ziemssen, op. cit.
³⁴ Tulloch, Army Reports. At Sea Island Stations, .50 per 1,000.
³⁵ Board of Health Report, 1878.
³⁶ U. S. Census Reports, 1880.
³⁷ Tulloch, Army Reports, 1853; Ziemssen, op. cit.
³⁸ Tulloch, Army Reports, 1840. Hotttentotts gave a rate of 1.23.
³⁹ Tulloch, Army Reports, 1853.
⁴⁰ Sanders, op. cit.
⁴¹ Tulloch, op. cit. 1841. Malays, 1.10, blacks, 3.20
⁴² Rept. City Board of Health; U. S. Census Report, 1880.
⁴³ Report Board of Health, 1878.
⁴⁴ Walton, U. S. Naval Reports, 1881, p. 67.
⁴⁵ Report Board of Health, 1886.
⁴⁶ Report Board of Health, 1878-1887.
⁴⁷ U. S. Census, 1880.
⁴⁸ Board of Health Report, 1885.
⁴⁹ Ziemssen, l. c.; Berichten d. Dänischen Gesundheitsamt
⁵⁰ Ziemssen, op. cit. ⁴⁹ Sanders, op. cit.
⁵¹ U. S. Census Reports, 1880.
⁵² U. S. Census Reports, 1880. Exclusive of Wilmington.
⁵³ Sanders, op. cit.
⁵⁴ U. S. Census Reports, 1880.
⁵⁵ Board of Health Reports.
⁵⁶ Meyer, Med. Topog. Dresden, 1840.
⁵⁷ Ziemssen, op. cit.
⁵⁸ Stark, Edinb. Med. and Surg. Jour., Vol. lxxvii, p. 624; lxxix, p. 512; lxxxi, p. 380.
⁵⁹ Ziemssen, op. cit.; Sanders, op. cit. In 13 cities the rate was 1.22, and in England and Wales, combined, 1.03. See Eighteenth An. Rpt. Reg. Gen., London, 1857.
⁶⁰ Sanders, op. cit. In 68 principal cities the rate was 1.60.
⁶¹ U. S. Census Report, 1880. Sanders, l. c., gives it 1.39.
⁶² Sanders, op. cit. ⁶² Sanders, op. cit.
⁶³ Laveran, Ann. d'Hyg., 1866. In the Army in Algiers the rate was—715 deaths, 46 pneumonic fever—6.4. See Laveran, Mal. des Armées, p. 28.
⁶⁴ U. S. Census Reports, 1840. The State system of registration is so faulty that it cannot be used.
⁶⁵ Hermann, Lungenentzündung, 1880.
⁶⁶ Sanders, op. cit. In 19 large cities the rate was 1.54.
⁶⁷ Hermann, op. cit.
⁶⁸ Ontario Reg. Reports, 1883-84-85.
⁶⁹ D'Espine, Ann. de la Mortal. Genev.
⁷⁰ Ziemssen, op. cit.
⁷¹ Tulloch Army Reports, 1853.
⁷² Baerensprung, Epidem. Krankh. in Halle, 1854; Abh. d. Naturf. Gesellsch. in Halle, Bd. i.
⁷³ Ziemssen, op. cit.; Hamb. Zeitschr. f. Med., Bde. 18, 21, 24, 27, 30, 33, 36, 39 u. 40; Walton, U. S. Naval Rpts., 1879, for percentage.
⁷⁴ Ontario Reg. Reports, 1883-84-85.
⁷⁵ Board of Health Report, 1887.
⁷⁶ Sanders, op. cit.
⁷⁷ U. S. Census Reports, 1880.
⁷⁸ State Board of Health Report, 1885; U. S. Census, Rpts., 1880. Exclusive of Chicago.
⁷⁹ U. S. Census Reports, 1880, and Reports State Bd. of Health, 1884-85-86. The latter are so unreliable that they can not be employed in calculating the rate per 1,000 of population.
⁸⁰ Tulloch, British Army Reports, 1853.
⁸¹ U. S. Census Reports, 1880.
⁸² Ziemssen, op. cit.; Sanders, op. cit., gives the rate as .31, and in four of the largest cities .54.
⁸³ Sanders, op. cit. In four large cities the rate was 2.95.
⁸⁴ Tulloch, Army Reports, 1838.
⁸⁵ U. S. Census Reports, 1880; Sanders, op. cit., gives it 1.49.
⁸⁶ U. S. Census Reports, 1880. Exclusive of Louisville.
⁸⁷ Ontario Reg. Reports, 1883-84-85.
⁸⁸ Report Board of Health, 1878.
⁸⁹ Stark, Edinb. Med. and Surg. Jour., Vol. lxxvii, p. 624, Vol. lxxix, p. 512, Vol. lxxxi, p. 480.
⁹⁰ Ziemssen, op. cit.
⁹¹ Ziemssen, op. cit.
⁹² Ontario Reg. Reports, 1883-84-85.
⁹³ U. S. Census Reports, 1880. Exclusive of New Orleans.
⁹⁴ Balfour, Edinb. Med. and Surg. Jour., Vol. lxxviii, p. 33.
⁹⁵ U. S. Census Reports, 1880. Sanders gives it .62 per 1,000.
⁹⁶ Tulloch, Army Report, 1839. In civil life it was .30 per 1,000.
⁹⁷ See Tulloch's Report for 1853.
⁹⁸ Salvagnoli Marchetti, Ann. Univ., 1846.
⁹⁹ U. S. Census Reports, 1880. Excepting Baltimore.
¹⁰⁰ Population excepts 7 largest cities, see U. S. Census Reports, 1880. Other facts, Reg. Reports, 1879; Palbey, Reg. Reports, 1845-1880.
¹⁰¹ Grant, Am. Jour. Med. Sci., July, 1853, p. 94.
¹⁰² U. S. Census Rpts., 1880. Excludes Detroit; Reg. Rpts., 1876.
¹⁰³ Board of Health Reports, 1878, 1880.
¹⁰⁴ U. S. Census Rpts., 1880. Excludes St. Paul and Minneapolis.
¹⁰⁵ U. S. Census Reports, 1880.
¹⁰⁶ Ibid.
¹⁰⁷ Report Board of Health, 1887.
¹⁰⁸ U. S. Census Reports, 1880.
¹⁰⁹ Sanders, op. cit.
¹¹⁰ U. S. Census Reports, 1880.
¹¹¹ Blaschke, Méd. Topog. Nova Archangélcensis.

The mortality from pneumonic fever bears the relations to that from phthisis, cancer, diphtheria and typhoid fever shown in the following table :

TABLE IV.—SHOWING PREVALENCE OF PNEUMONIC FEVER COMPARED WITH CERTAIN OTHER DISEASES

Per cent of deaths and deaths per 1,000 of population

LOCALITY	Years	Pneu- monic Fever	Phthisis	Cancer	Diph- theria	Ty- phoid Fever
Baltimore ¹¹¹	1	65	13	280	49	20
Cincinnati ¹¹²	20	67	154	296	14	33
Connecticut ¹¹³	10	66	115	138	220	24
Hartford ¹¹⁴	6	74	166	128	246	46
N Hampsh ¹¹⁵	1	77	132	138	245	61
New York ¹¹⁶	1	72	103	140	34	10
Pittsburgh ¹¹⁷	14	76	165	96	222	52
St Paul ¹¹⁸	1	63	77	75	120	23
Unit'd States ¹¹⁹	1	84	126	121	183	49
Averages		71	127	123	226	23

¹¹¹ Tulloch, op cit, 1853

¹¹³ Tulloch, 1 c

¹¹⁴ U S Census Reports, 1880, Rpt Reg, 1888

¹¹⁵ Board of Health Reports

¹¹⁶ U S Census Rpts, 1880, Reg Rpts, 1878-79 Population ex-
clusive of Newark and Jersey City Sanders makes the rate 59 per
1,000, see op cit

¹¹⁷ U S Census Reports, 1880

¹¹⁸ Rpt Bd of Health See also Stark, Edinb Med and Surg
Jour, Vol lxxv, p 130, who gives the rate 90

¹¹⁹ U S Census Reports, 1880 Lee, Copland's Med Dic, N Y,
1855, Vol II, p 891, Rpts St Bd Health, 1876-1879, 1885

¹²⁰ Rpt Bd Health, Dannel, Am Jour Med Sci, May, 1838

¹²¹ Walton, U S Naval Reports, 1879

¹²² Sanders, 1 c In two large cities the rate was 1 99

¹²³ Chamberlain, op cit, Sanders, op cit

¹²⁴ U S Census Reports, 1880

¹²⁵ Tulloch's Reports, 1853

¹²⁶ U S Census Reports, 1880 Exclusive of five large cities

¹²⁷ Ontario Reg Rpts, 1883, 84, 85

¹²⁸ U S Census Reports, 1880

¹²⁹ Ontario Reg Reports, 1883, 84, 85

¹³⁰ Ziemssen, op cit Trébuchet, Ann d'Hyg Ann, T V, gives
the rate as 2 50, and Juergensen, Ziemssen's Hand d Spec Path
and Therap, Bd V, as 3 82 per 1,000

¹³¹ U S Census Reports, 1880 Exclusive of five large cities

¹³² Board of Health Report, 1879

¹³³ Report Vital Statistics, 1870, Trans Col Phys and Surg,
Vol II, Emerson, Am Jour Med Sci, Nov, 1827, p 116, Nov, 1831,
p 17, July, 1848, p 13 This author gives the rate—1827-1840—as 1 10

¹³⁴ Report Board of Health, 1877-1886

¹³⁵ Snow, Report Health Officer, 1877-1880

¹³⁶ Reg Rpts U S Census Reports, 1880

¹³⁷ Board Health Reports

¹³⁸ Board Health Reports

¹³⁹ Sanders, op cit

¹⁴⁰ Report Board Health, 1887

¹⁴¹ Sanders, op cit, Chamberlain, op cit

¹⁴² Report Board of Health, 1876

¹⁴³ Report on Vital Statistics

¹⁴⁴ Report Board of Health, 1876

¹⁴⁵ Sanders, 1 c In eight large cities the rate was 1 12

¹⁴⁶ Tulloch, Army Rpts, 1840 In the case of Negroes it was 1 10

¹⁴⁷ Sanders, op cit

¹⁴⁸ U S Census Reports, 1880 Exclusive of Charleston

¹⁴⁹ Ontario Reg Reports, 1883, 84, 85

¹⁵⁰ Tulloch, op cit, 1840 In military life the rate was 50

¹⁵¹ Report Board of Health

¹⁵² Report Board of Health, 1886

¹⁵³ Ontario Reg Report, 1883, 84, 85,

¹⁵⁴ Sanders, op cit In three large cities it was 1 71

¹⁵⁵ U S Census Reports, 1880

¹⁵⁶ U S Census Reports, 1880

¹⁵⁷ Ontario Reg Reports, 1883, 84, 85

¹⁵⁸ Inform Status, etc, Torino, 1847-52

¹⁵⁹ U S Census Reports, 1880 In 50 large cities the rate was

1 43 per 1,000 of population, and 6 7 per cent of deaths

¹⁶⁰ Circular No 6, War Dept Osterlen, Med Stat S 573 gives
the average of 10 years as 4 4 per cent

¹⁶¹ U S Marine-Hospital Reports

¹⁶² U S Census Reports, 1880

¹⁶³ U S Census Reports, 1880

¹⁶⁴ U S Census Reports, 1880 Exclusive of Richmond

¹⁶⁵ U S Census Reports, 1880

¹⁶⁶ U S Census Reports, 1880

¹⁶⁷ U S Census Reports, 1880 Exclusive of Milwaukeee

¹⁶⁸ Virchow, Statistik W urzburg, 1859

¹⁶⁹ U S Census Reports, 1880

¹⁷⁰ Ziemssen, op cit, Jahresb d Gesundheitsampt d Canton

Zurich, 1848 ff Weller, Inaug Diss, Zurich, 1834 S 5

¹⁷¹ Board of Health Report, 1886

¹⁷² Board of Health Report, 1886

¹⁷³ Report State Board of Health, 1886

Osterlen¹⁶⁰ gives the proportion of deaths from pneumonic fever and phthisis as 1.85 and 2.50 per 1000 of population, respectively. Ziemssen¹⁶¹ places them at 1.70 and 3.20 respectively. Juergensen¹⁶² gives the proportion as 1.70 to 3.23 in London; 2.52 to 3.82 in Paris and 1.13 to 2.96 in Berlin. Klinger¹⁶³ found that during the five years, 1868-72, pneumonic fever caused more deaths than phthisis in Bavaria, the proportion being 2.2 and 2.1 per 1000 persons. In Christiana¹⁶⁴ the ratio is 1.16 to 2.85.

In estimating the morbidity of this disease we are met by a very practical difficulty, and that is the impossibility of obtaining statistics which fairly represent the whole body of the population. The available material has all been derived from particular and exclusive classes—such as army and navy returns. That these cannot afford averages applicable to the generality of the inhabitants of the world is self-evident. However I have made use of such materials as are obtainable, and from them constructed the following table:

TABLE V.—SHOWING MORBILITY OF PNEUMONIC FEVER

AUTHORITY	Persons	Cases	Per 1,000
Circular No 6, War Dep't, Washington, 1865	934,444	31,527	33 8
Fitzsimmons Lancet, 1884, Vol 1, p 142	1,465	11	45 2
Forry, Mortal U S Army, Washington, 1840	3,138	22	7 0
Hermann, Lungentzündung, etc, S 13	59,922	396	6 7
Laveran, Mal des Armées, Paris 1875, p 28	53,137	235	4 4
Tulloch, Mortal British Army, London	542,427	15,850	29 2
U S Naval Reports 1880-81	21,353	89	4 2
Totals and averages	1,637,886	48,130	29 9

From this table we find that the average annual morbidity of pneumonic fever is 29.9 per 1000 inhabitants.¹⁷³ This is somewhat in excess of the amount given by Forry¹⁷⁰ and quoted with approval by Lee¹⁶⁷ and Drake,¹⁶⁸ viz., 23 cases per 1000 of population. I am convinced, however, that both these estimates are excessive, due to the fact that soldiers are more liable to this dis-

¹⁷⁴ Board of Health Report, 1887

¹⁷⁵ Report State Board of Health, 1885

¹⁷⁶ Board of Health Report, 1886

¹⁷⁷ Board of Health Reports, 1880-87

¹⁷⁸ Board of Health Report, 1886

¹⁷⁹ U S Census Reports, 1880

¹⁸⁰ Med Statistics, S 377 u 566

¹⁸¹ Op cit, S 14

¹⁸² Op cit, S 12

¹⁸³ Lungkrankh in Bayern, Munchen, 1874, S 2 u 18

¹⁸⁴ Colles, U S Naval Rpts, 1881, p 414

¹⁸⁵ Hirsch, op cit, gives a table upon this point which is appended with the comment that to me it is very unsatisfactory. According to this author the annual sickness from this disease is as follows: In Madras, 21 3 for whites and 1 1 for natives in Bengal, 11 in Bombay, 6 6, in Sierra Leone, 8 for whites and 8 for blacks, in Ceylon, 17 8 for whites and 13 5 for Malays, in the Antilles 23 for whites and 45 for blacks, in Jamaica, 14 for whites and 12 for blacks in Mauritius 22 6 for whites and 18 6 for blacks in Gibraltar, 15, in Malta, 14 6, in Bermuda, 7, in Cape Town, 29 for whites and 3 6 for Hottentots, in Cape Country, 23 4 in St Helena, 4 1, in the Ionian Isles, 10 1, in the United States Army, 14 for cavalry 13 7 for artillery and 19 7 for infantry, in Canada 19 7, in Nova Scotia, 14, in Newfoundland, 7 2, and in New Brunswick, 14

¹⁸⁶ Mortal U S Army, Wash, 1840, p 246

¹⁸⁷ Copland's Med Dic, N Y, 1855 Vol II, p 590

¹⁸⁸ Dis Int Valle N A, Phila, 1854 p 709

ease¹⁸⁹—but with a lower death-rate¹⁹⁰—than are civilians. The death-rate of pneumonic fever, as I shall demonstrate in a subsequent table, is about 18.1 per cent., and the average mortality from it is 1.27 per 1000 inhabitants, as has been shown. Now if we estimate 5.5 cases for each death we would arrive at the result that there are, annually, about 7 cases per 1000 of population; and I am inclined to believe this near the real proportion.

Pneumonic fever constitutes about 1.2 per cent. of all the diseases which the physician is called upon to treat, as shown in the following table:

TABLE VI.—SHOWING PREVALENCE OF PNEUMONIC FEVER COMPARED WITH OTHER DISEASES.

AUTHORITY.	Years.	Cases of all Diseases	Cases of Pneumonic Fever.	Per cent.
Alexian Bros. Hospital, Chicago, Report . . .	1	1,514	27	1.8
Armstrong, U. S. Mar. Hosp. Rept., 1886 . . .	6	928	36	3.9
Badula Hosp., LaRoche, Pneumonia, p. 66 . . .	3	597	7	1.2
Blane, Select. Diss., Vol. i, pp. 207-247 . . .	10	3,160	145	4.6
Boston City Hospital, Reports . . .	3	11,581	424	3.8
Brooklyn Naval Hospital, Report . . .	1	201	1	.5
Chelsea Naval Hospital, Report . . .	1	434	13	3.0
Cincinnati Hospital, Reports . . .	2	6,258	124	2.0
Erlangen Krankenhaus, Fritsch, Inaug. Diss. 1878 . . .	10	18,754	824	4.3
Garfield Hospital, Washington, Rpt., 1887 . . .	1	604	3	.5
German Hospital, Philadelphia, Reports . . .	7	4,062	54	1.3
Jersey City Hospital, Report, 1886 . . .	1	882	15	1.8
Jones, Jour. Am. Med. Ass., Aug. 7, 1886 . . .	1	6,311	218	3.4
Kaudy Hosp., LaRoche, op. cit., p. 66 . . .	3	1,678	30	1.8
Kiel Polyclinic, Juergensen, op. cit . . .	1	3,993	203	5.1
Maillet, Fiev. Int., p. 114 . . .	1	3,705	6	.4
Marshall, Med. Topog. Ceylon, p. 39 . . .	5	1,082	29	2.7
Montreal Hospital, Neppel, Fiev. Int. . . .	4	1,352	84	6.2
Newport Hospital, Reports . . .	3	533	14	2.8
New York Hospital, Reports . . .	10	42,394	577	1.3
New York Night Med. Serv., Med. Gaz. . . .	1	573	29	5.0
Pennsylvania Hospital, Reports . . .	15	32,373	458	1.5
Polyclinic Erlangen Univ., Fritsch, Diss. . . .	1	18,752	824	4.5
Providence Hospital, Washington, Reports . . .	1	1,642	9	.5
Roosevelt Hospital, New York, Reports . . .	15	25,662	492	1.9
Sierre Leone Garrison, Tulloch, op. cit . . .	1	5,489	15	.3
St. Louis City Hospitals, Report . . .	3	25,656	410	1.6
St. Mary's Hosp., Cincinnati, Report . . .	5	8,192	103	1.2
St. Paul's City Hospital, Report . . .	2	1,147	27	2.4
Salem Hospital, Report . . .	1	72	2	.7
Thevenot, Mal. des Europ., etc., p. 232 . . .	1	952	5	.5
Tübingen Polyclinic, Juergensen, op. cit . . .	3	3,006	112	3.7
University of Penn. Hospital, Reports . . .	4	34,387	36	.1
U. S. Army in Rebellion, Cir. No. 6 . . .	2	2,590,712	31,527	1.2
U. S. Marine-Hospital Service, Reports . . .	10	317,602	2,807	.9
U. S. Navy, Reports . . .	3	30,894	168	.5
Kieler Polyclinic, Schroeder, Pneum., 1882 . . .	1	35,524	1,277	3.6
Kober, Rpt. St. Bd. Health Cal., 1885, p. 192 . . .	1	1,500	9	.6
Author . . .	15	30,482	498	1.5
Totals and average . . .		3,274,400	41,642	1.2

Writers have varied widely in their estimates of the comparative prevalence of this disease. Juergensen¹⁹¹ puts it at 3 per cent. of all, and 6.4 per cent. of internal diseases, and Palmer¹⁹² coincides with him. Huss¹⁹³ found it the cause of 10 per cent. of internal diseases, Lépine¹⁹⁴ 2 to 3 per cent. of the sickness, whilst the percentage is placed at 1.1 by Hermann¹⁹⁵ and 16.6 by Andral.¹⁹⁶

Pneumonic fever formed 6.6 per cent. of the cases admitted into the hospitals of Montreal,¹⁹⁷ 2.3 per cent. of the cases in the Children's Hospital of Vienna,¹⁹⁸ .15 per cent. of the diseases of Ceylon,¹⁹⁹ 7 per cent. of the adult, and from 20 to 25 per cent. of the infantile maladies in Paris;²⁰⁰

TABLE VII.—SHOWING MORBILITY OF PNEUMONIC FEVER COMPARED WITH CERTAIN OTHER DISEASES.

		PER CENT. OF ADMISSIONS.								
HOSPITAL.		Pneumonic Fever.	Phthisis.	Acute Pleurisy.	Acute Bronchitis.	Scarlatina.	Diphtheria.	Cereb.-spinal Fever.	Typhoid Fever.	Acute Rheumatism
Alexian Bros., Chicago . .	1	1.8	1.5	.9	.6	.	1.0	.	.	1.0
Boston City . . .	1	3.8	4.8	.	2.2	.4	1.0	.	2.6	1.0
Garfield, Washington . . .	1	.5	6.3	.2	1.4	.	.2	.	2.0	.3
German, Philadelphia . . .	6	1.3	5.0	.9	1.1	.	.	.	6.9	3.3
Jersey City, City . . .	1	1.8	5.5	.7	.6	.	.	.	.4	2.4
Marine-Hosp. Med. Serv. . .	1	.9	2.1	.4	4.0	.	.	.	.	8.9
Newport, R. I. . . .	1	2.8	4.6	.	2.4	.	.	.	6.7	6.7
New York Hospital . . .	10	1.3	1.2	.5	.3	.	.	.	.6	1.4
Pennsylvania . . .	15	1.5	2.1	.8	1.3	.	.	.	.2	3.4
Providence, Washington . .	1	.5	5.9	1.3	.8	.	.	.	2.2	3.4
Roosevelt . . .	15	1.9	6.0	1.0	.7	.	.1	.1	1.6	2.7
St. Louis City Hospital . . .	2	1.6	5.1	.8	2.6	.	.2	.	.4	3.1
St. Mary's, Cincinnati . . .	5	1.2	6.6	.7	3.6	.3	.	.	3.6	4.1
St. Paul's, City	2	2.4	4.4	.6	1.0	.	.	.	1.5	3.0
University Pa. Hospital . .	4	.1	2.3	.3	1.3	.	.	.	.2	1.3
Averages . . . . .	.	1.7	4.5	.6	1.7	.3	.4	.1	2.2	3.2

TABLE VIII.—SHOWING FLUCTUATION OF PNEUMONIC FEVER.

LOCALITY.	Deaths per 1,000 of Population.				
	Years.	Mean.	Maximum.	Minimum.	Fluctuation.
Algiers	5	2.3	2.6	1.6	1.0
Berlin	21	1.1	1.4	.8	.6
Boston	10	1.5	2.0	1.5	.8
Chicago	2	1.3	1.4	1.1	.3
Cincinnati	20	1.5	1.9	.8	1.1
Connecticut	10	1.1	1.6	.7	.9
Copenhagen	15	1.7	2.5	.7	1.8
Cork	9	.4	.7	.2	.5
District of Columbia	9	2.3	2.9	2.1	.8
Dublin	9	.8	1.2	.5	.7
England	11	1.2	1.4	1.1	.3
Edinburgh	3	1.4	1.7	.9	.8
Ghent	4	1.2	1.6	1.0	.6
Halle	10	2.3	3.4	1.4	2.0
Hamburg	9	2.2	2.6	1.6	1.0
Hartford	5	1.6	2.2	1.2	1.0
Ireland	9	.3	.4	.1	.3
London	17	1.7	2.1	.9	1.2
Massachusetts	22	1.3	1.8	.9	.9
Milwaukee	1	.9	1.0	.8	.2
New Haven	10	1.2	1.8	.5	1.3
New Jersey	3	1.1	1.2	1.0	.2
New Orleans	2	1.5	1.7	1.2	.5
Paris	14	2.5	3.2	2.0	1.2
Philadelphia	2	1.5	1.5	1.4	.1
Pittsburgh	7	1.6	2.0	1.4	.6
Providence	4	1.5	1.9	1.0	.9
Rhode Island	15	.9	1.6	.6	1.0
Rochester	2	.9	1.0	.8	.2
San Francisco	3	1.1	1.4	.7	.7
Savannah	16	1.7	3.6	.6	3.0
Zürich	14	2.0	2.6	1.5	1.1
Means of totals		1.4	1.8	1.0	.8

¹⁸⁹ Hermann, Lungenentzündung, S. 6.

¹⁹⁰ Colin, Etudes Clin. de Méd. Mil., Paris, 1863.

¹⁹¹ Opus citata, S. 11.

¹⁹² Physician and Surgeon, 1878.

¹⁹³ Lungenentzündung, Leipzig, 1861, S. 63.

¹⁹⁴ Pneumonie, Wien, 1883, S. 15.

¹⁹⁵ Lungenentzündung, etc., S. 13.

¹⁹⁶ Path. Interne, T. i, p. 366.

¹⁹⁷ Neppel, op. cit., p. 29.

¹⁹⁸ Gölis, Kinderkrankh., Wien, 1820.

¹⁹⁹ Grisolle, Traité de la Pneumonie, Paris, 1850, p. 130.

²⁰⁰ Lombard, Arch. Gen. de Méd., T. xxv, p. 68.

2.6 per cent. of the cases in the Vienna hospitals;²⁰¹ 6.6 per cent. of the admittances into the Paris hospitals;²⁰² 2.5 per cent. of the sickness in the Berlin hospitals;²⁰³ 2 per cent. in those of Stüttgart;²⁰⁴ and 17 per cent. in Salpêtrière of Paris.²⁰⁵

Pneumonic fever prevails, in comparison with certain other diseases, as shown in table VII.²⁰⁶

TABLE IX.—SHOWING FLUCTUATION OF PNEUMONIC FEVER. Morbidity.

HOSPITAL.	Per ct. of admissions				
	Years.	Mean.	Max. num.	Min. num.	Fluctuation.
German Hospital, Philadelphia	7	1.3	3.0	.9	2.1
Kiefler Poliklinik	36	3.6	6.3	2.1	4.2
Newport Hospital	10	2.8	4.0	1.6	2.4
New York Hospital	10	1.3	1.8	.8	1.0
Pennsylvania Hospital	15	1.5	2.7	.6	2.1
Roosevelt Hospital	15	1.9	2.8	.8	2.0
St. Louis City Hospitals	3	1.6	1.8	1.4	.4
St. Mary's Hospital, Cincinnati	3	1.2	2.1	1.4	.7
St. Paul's City Hospital	4	2.4	3.4	1.5	1.9
University of Pennsylvania Hospital	4	1.1	.2	.1	.1
United States Marine-Hospital Service	10	.9	2.1	.5	1.6
Means of totals . . . . .	..	1.5	2.4	.9	1.4

The annual prevalence of pneumonic fever in any given locality will vary from time to time, within wide limits, as shown in tables VIII and IX.²⁰⁷

Huss²⁰⁸ found the admissions for pneumonic fever into the Seraphim hospital of Stockholm during sixteen years to vary from 6.5 per cent. to 15.4 per cent. of internal diseases. His statistics give a mean of 10 per cent. and a fluctuation of 8.9 per cent.

THE DETECTION OF THE BACILLUS TUBERCULOSIS, TECHNIQUE.

Read before the Chicago Medical Society February, 18, 1889.

BY FRANK BILLINGS, M.D.,
OF CHICAGO.

The form of the bacillus tuberculosis is not characteristic, and it cannot, therefore, be differentiated from other pathogenic and non-pathogenic bacteria by its form alone. It is a very thin bacillus, about 2 to 5 micromillimetres in length (from one-quarter to one-half the diameter of a red blood-corpuscle). It is usually slightly bent.

Like all protoplasmic cells it has an affinity for the aniline colors, and its reaction to these colors is characteristic when the aniline is combined with a mordant.

²⁰¹ Juergensen, op. cit., S. 12.

²⁰² Grisolle, op. cit., p. 127.

²⁰³ Juergensen, op. cit., S. 12.

²⁰⁴ Ibid.

²⁰⁵ Ibid.

²⁰⁶ On this subject consult Huss, op. cit., Erlangen Diss., and others.

²⁰⁷ No effort has been made to render these tables exhaustive.

²⁰⁸ Op. cit., S. 63.

To elicit the characteristic reaction of the bacillus to the aniline colors it is necessary to proceed in a methodical manner. The instruments used, forceps, needles, etc., should be clean, sterilized by heating in a gas or other flame. The cover-glasses and slides should be cleansed in fine alcohol.

The material supposed to contain the bacilli should be collected in a clean vessel, and when collected should be protected from contamination by the air, etc.

The material should be spread in a very thin layer upon a cover-glass, by means of a needle, or by placing a small amount upon one glass and then pressing another cover-glass upon the first, thus making a thin layer upon the two cover-glasses. The thin film is then allowed to dry upon the cover-glass, or the drying may be hastened by warming it over a gas flame. Then, when dry, by passing the cover-glass quickly two or three times through the flame, the albumin usually present in the medium, fixes the film upon the glass.

The cover-glass is now ready for the aniline dye. One may use any color, but aniline violet, methyl blue or fuchsin is usually employed. Fuchsin is the most often used, because its bright red renders the bacilli more prominent to most observers; and, too, one may use with it, better than with the other colors, a contrast color for the ground substance on the cover-glass.

The color used must be combined with a mordant, which so fixes it in the bacillus of tuberculosis as to render it very much less susceptible to the bleaching effects of the mineral acids, while it does not so affect other bacteria, with but two exceptions, which I shall mention later.

There are several substances that may be used as a mordant; aniline water, carbolic acid, tannic acid, and others. Aniline water was first used, and is still by some, but the mordant now in common use, and the one used by Prof. Koch, is carbolic acid. It has the advantage over aniline water that a solution of it with the color may be kept indefinitely, while the aniline water solution must be made each time it is used.

The following solution of fuchsin (Ziehl & Neelson) is a satisfactory one in every way:

Take of Fuchsin 1 part,
Acidi carbolici 5 parts,
Alcoholis 10 "
Aque distillatæ 100 "
Mix in the order given.

A few drops of the staining fluid are placed upon the cover-glass, held in a forceps with the film upwards over a gas or alcohol lamp flame until the solution boils or gives off steam. It is then washed in water and is ready for the process of bleaching.

For bleaching, any of the mineral acids may be used. A 25 to 33 per centum watery solution of

hydrochloric, nitric or sulphuric acid is used. Koch prefers nitric acid, his laboratory assistant uses sulphuric, while at Vienna hydrochloric is chiefly used. It is probably immaterial which acid is employed.

The stained cover-glass is immersed in the acid solution for a moment, then in a 70 per cent, water solution of alcohol, and finally washed in water. The immersion in acid, alcohol and water, successively, being repeated until the color is almost or quite bleached. This process leaves the bacillus tuberculosis colored red, while the ground substance and all other bacteria, with the two exceptions mentioned, are bleached. The mordant used enables the bacilli of tuberculosis to retain the color. Too long immersion in the acid will also overcome the action of the mordant and render the examination *nil*. The cover-glass should be finally thoroughly washed in water to remove all acid, otherwise the slight amount of acid remaining will gradually fade the color and in a few months the preparation will become worthless.

The cover-glass may now be mounted on a slide in water or glycerine, or, after drying, in Canada balsam. One may, however, use a contrast color—methyl blue for the ground work. It is only necessary to float the cover-glass, with the film downward, upon a 1 to 2 per cent. watery solution of the methyl blue for five minutes. The excess of blue color is washed off with water, the cover-glass dried and mounted. The bacilli of tuberculosis will be seen stained red and other elements will be blue.

For tissue containing the bacilli it is necessary to immerse the sections for from 12 to 24 hours in the fuchsin solution. They are then decolorized by immersion in the acid solution, the alcohol, etc., until only a faint redness remains. The sections are then dehydrated in alcohol and cleared up in the oil of cloves. When mounted the bacilli are seen red, the tissue decolorized. The methyl blue may be used as a contrast color, also, for sections.

To easily detect the bacilli so prepared, one should have a microscope magnifying at least 450 diameters; however, the bacilli may be seen with a less powerful glass. An ordinary stand and substage will do for cover-glass preparations, but an Abbé substage condenser is a decided aid to the discovery of the bacilli in cover-glass preparations, and it is absolutely necessary in examining sections.

The discovery of the bacillus tuberculosis in the excretions, secretion or exudates examined is positively diagnostic of a tubercular disease. When it cannot be detected its absence is not of much diagnostic value, for it may be present in such small numbers as to render its detection difficult or impossible. When it is not found readily repeated examinations of material collected on

different days must be made to make its absence of any worth as a negative sign.

The bacillus is most easily detected in the sputa of tuberculosis pulmonum. It is most difficult to detect in the blood, even in cases of acute general tuberculosis.

It is not usually difficult, as a rule, to detect it in the exudates into serous cavities; as in tubercular pleuritis, tubercular peritonitis and tubercular synovitis. I have found the bacillus in the contents of a distended Fallopian tube.

In tubercular disease of bone it is usually present in the cheesy infiltrate, but is difficult to find in the pus from sinuses in tubercular diseases of bone.

In the urine the bacillus is difficult to detect because of the bulk of urine and the decomposing effects of the urine. Then the *preputial and labial smegma bacillus* gives the same color reaction as the tubercle bacillus, and its form is so nearly like the bacillus of tuberculosis that it cannot be differentiated from it with the microscope. The presence, therefore, of a bacillus in secretions from the genitals, giving the color reaction and presenting the form of the bacillus tuberculosis is not here, as it is elsewhere, a positive sign of tuberculosis.

In tubercular disease of the skin and mucous membranes the secretion therefrom sometimes contains the bacillus. Sections made from tissue taken from tubercular ulcers usually yield the bacillus.

The bacillus of leprosy is nearly like the tubercle bacillus in form, and it gives the same color reaction. The clinical course of leprosy is so distinct, and the disease is so rare in this climate that it is not difficult to exclude it when considering a tubercular disease.

No. 235 State Street.

COMPLETE REMOVAL OF THE UTERUS AND ITS APPENDAGES FOR FIBRO- CYSTIC GROWTH.

BY H. C. PEARCE, A.M., PH.D., M.D.,
PROFESSOR OF OBSTETRICS, COLUMBUS MEDICAL COLLEGE,
COLUMBUS OHIO.

Reported by T. M. TALBOT, A.M., M.D.

About January 1, 1888, Dr. Pearce, of Urbana, Ohio, was consulted by Mrs. C., æt. 36, in reference to an abdominal enlargement. On examination a globular body, the size of a foetal head at birth, was found in the right hypogastric region. Cystic disease of the right ovary was diagnosed. The tumor being small and the patient anæmic and in poor general health, noninterference for the present was advised. The patient was put upon bark and iron, and a general tonic treatment. Under this treatment she increased in strength and health, but with this improvement

there was a rapid increase in the growth of the tumor.

August 1, 1888, the patient again consulted Dr. Pearce. The tumor now filled the entire abdominal cavity, reaching up to the ensiform cartilage. The patient was nervous and irritable, and owing to the great distention of the abdominal muscles, she was suffering intensely from neuralgia at the tendinous insertions of these muscles. An immediate operation for the removal of the tumor was advised, but the patient, being of an exceedingly nervous temperament, could not make up her mind to undergo an operation. Accordingly, in the hope of obtaining relief otherwise than by operation, she consulted surgeons in both Cleveland and Cincinnati. These advised immediate removal of the tumor.

Meanwhile the tumor grew larger, and the patient grew weaker and more emaciated. It was not until death seemed imminent that she consented to an operation.

On November 5, 1888, assisted by Drs. J. H. Ayers, I. W. Goddard, H. M. Pearce and T. M. Talbot, Dr. Pearce operated at the home of the patient. This home, by the way, was a comfortable and commodious house. A room was selected with a view to size, light and ventilation. It was heated by an open grate, and received light from the west and south.

Before beginning the operation the temperature of the room was raised to 80° F. The patient was then etherized and placed upon the table. The abdomen was washed thoroughly with soap and water, then shaved, and finally washed with a 5 per cent. solution of carbolic acid.

The operation was begun by making an exploratory incision, two and one-half inches long in the median line, about half-way between the umbilicus and the symphysis pubis. Examination revealed a large fibro-cystic tumor of the uterus, strongly adherent to the right abdominal wall and surrounding tissue, and which had grown from the uterus and extended up to the ensiform cartilage.

The primary incision, being too small to make a complete examination, was increased to three and one-half inches. The ovariectomy trochar and cannula was then introduced, but the cyst could be only partially emptied of its fluid contents. The cannula was reintroduced at different points, but the fluid still remained to a considerable extent. Further examination showed the cyst to be divided by thick fibrous walls into three principal compartments. Each of these compartments was divided into numberless compartments or cysts by fibrous bands extending in all directions from the walls of the principal cyst. This condition, of necessity, rendered complete evacuation of the fluid contents of the tumor impossible. Accordingly the mass was loosened

from its posterior and lateral adhesions, and with difficulty it was drawn out of the original opening of three and one-half inches. After bringing out the sac or fibrous mass it was found that the growth had begun at the junction of the body of the uterus with the cervix—the point known as the isthmus. The growth enveloped the entire body of the uterus, and involved and completely surrounded both ovaries and broad ligaments. It was bound down laterally and posteriorly by fibrous adhesions that were difficult to break up, and which left a large bleeding surface within the cavity of the abdomen. These were unlooked for complications; and it left but one of two courses to pursue, viz.: the return of the mass entire or the removal of the tumor, including the uterus and all of its appendages.

The latter procedure was resolved upon, and carried out in the following manner: A Spencer Well's clamp was placed just below the junction of the body and cervix, and then tightened as much as possible without severing the parts. All the arteries supplying the broad ligaments and uterus were then tied with silk braid. This being done, the entire mass, tumor, uterus, and appendages was removed by cutting it off just above the clamp. The mass weighed thirty pounds.

The abdominal cavity was now thoroughly washed out with water, previously boiled and cooled to a temperature of 100° F. Several silk-braid sutures were passed through the abdominal walls, including the peritoneum; but before trying them a half-inch glass drainage tube was introduced into Douglas' cul-de-sac, and the peritoneum brought together by continued catgut suture. The ends of the deep suture were then tied, thus completely closing the wound except where the tube and clamp were.

The cavity was again washed out with warm water until the water came away clear. The incision was dusted over with powdered iodoform, and covered with silk isinglass plaster, moistened with a 5 per cent. solution of carbolic acid; over this plaster was placed a layer of iodoform gauze, then a layer of absorbent cotton, and all were held in place by a tight binder.

In this condition the patient was put to bed, and rubber bottles, filled with hot water, were placed to the extremities. Although the operation was quite tedious, lasting almost an hour, there was little apparent shock. This was very remarkable, when we take into consideration the frail and nervous condition of the woman, the nature and extent of the operation, together with the extensive adhesions of the tumor to the walls of the abdomen.

Twelve hours after the operation the temperature rose to 99.5° F., and the pulse to 120; eighteen hours after the temperature was 100° and pulse 135. At the end of thirty-six hours

the temperature was 100.5° F. and pulse 115. The temperature remained thus for five days, but the pulse dropped to 98. From this time on the temperature and pulse were practically normal.

The subsequent treatment is that to which especial attention is called. At the end of eighteen hours all the dressings were taken off, and the accumulated fluid removed as follows: A flexible rubber tube, about the size of a No. 12 soft rubber catheter, was attached to the nozzle of a syringe; the free end of this tube was passed in the drainage tube to Douglas' cul-de-sac, and the fluid drawn up into the syringe. The fluid thus removed amounted to about three ounces, and was sanguineous and very foetid in character. After the removal of the fluid the cavity was thoroughly washed out with water previously boiled and tempered to 102° F. The remaining water was withdrawn by means of the syringe as before described. No antiseptics were added to the water, nor were any antiseptics at any time used within the cavity of the abdomen. This mode of treatment was followed out twice in every twenty-four hours as long as this foetid fluid, before mentioned, accumulated in the cavity—which was twenty-two days.

On the twenty-second day the clamp came off, leaving a clean healthy-looking stump of the cervix. The sutures that still remained were removed, the glass drainage tube taken out, and a small rubber drainage tube was substituted. This tube was left in for one week. The syringe and a smaller rubber tube was used to draw out whatever pus accumulated, and the cavity washed out as before—though now once a day.

Particular mention is thus made of the washing out process, not because it is new in such cases, but because of the frequency with which it was employed. That this frequent and complete irrigation of the cavity has been of the greatest utility in this case is evidenced by the fact, that during the whole time, though removal of the tumor and uterus left a large suppurating surface within the cavity of the abdomen, there was little rise of temperature, and no tympanites nor tenderness over the abdomen.

The diet during the first three weeks was almost exclusively milk, which was taken cold and in liberal quantities. Since the first four weeks the diet has been somewhat liberal and varied. The other treatment has been such as is customary in ordinary abdominal sections.

The patient's recovery, owing to her emaciated and weakened condition prior to the operation, has been slow but steady. The wound has closed, leaving a smooth cicatrix about two and one-half inches long. The patient's appetite and general appearance have improved very much since the operation, and she has gained very rapidly in flesh. Her recovery is complete and very satisfactory.

MEDICAL PROGRESS.

A METHOD OF GENERATING NEUTRAL FUMES OF AMMONIUM CHLORIDE OR BROMIDE FOR INHALATION has been devised by DR. PATRICK WILLIAM MAXWELL, of Dublin. The instrument is made by Messrs. Anderson and Adams, 68 Grafton St., Dublin. It consists of a wide piece of glass tube, like the cylinder of an ordinary glass syringe, placed horizontally on two wooden uprights. About 15 grs. of ammonium chloride are introduced by a spoon through the wide end of this tube, and are placed in a little heap in the centre. The base is then lightly stopped with cotton wool. A lighted spirit-lamp, placed below the tube volatilizes the salt. A piece of india-rubber tubing with a glass mouthpiece is attached to the narrow end of the tube, by means of which the fumes are inhaled. A current of cold air rushing in by the large end of the horizontal tube mixes with the fumes and reduces their temperature, so that they are not more than slightly warm. These fumes are perfectly neutral from first to last, as is proved by passing them through red or blue litmus solution. Even phenol-phthalein does not become colored. There is also no free chlorine, for starch paper is unaffected. In the course of the inhaling tube is placed a glass bulb filled with glass wool moistened with water. This prevents the fumes from being too dry. Besides being perfectly neutral the fumes supplied by this instrument have the advantage of containing more ammonium chloride than is contained in the same volume of fumes from the ordinary inhalers.

When it is desired to apply the fumes to the middle ear a tube rather longer than the ordinary one can be attached to an Eustachian catheter, and the fumes pumped in by an india-rubber hand-ball fitted to the larger end of the horizontal tube.

The fumes, if desired, can be medicated by oil. pin. sylvest., eucalyptus, etc., by dropping about 5 μ of the oil upon the wool at the wide end of the tube.

As the iodine and bromine salts seem, when given internally, to have a greater selective affinity for the nose and throat than the chlorides, it occurred to me to try whether their ammonium compounds could be volatilized for inhalation. In the case of iodide of ammonium I found that though the greater part was volatilized as such, still it was mixed with so much free iodine and ammonia as to be very irritating and quite unfit for inhalation. In the case of bromine of ammonium, when only a moderate heat is used, the salt volatilizes unchanged, but as the temperature rises the odor of bromine can easily be detected in the fumes. Its presence can also be shown by its blueing starch and iodide paper. It was natural to expect, at least an equal amount of free am-

monia. Red litmus was not changed, but phenolphthalein gave a slight red. Ammonia is therefore present, but only in very small quantity. The quantity of free bromine must also be very small, as none of the patients who have as yet used these fumes have found them irritating. If the glass-wool is wet with an aqueous solution of resorcin of about 20 grs. to the $\frac{5}{2}$ j, all free bromine will be absorbed from the fumes. All ammonia is also, as already stated, absorbed by the water, so the fumes may be said to be neutral and pure.

The action of bromide of ammonium fumes seems to be very similar to that of the chloride. The bromide seems to draw more fluid from the mucous membrane, its greater osmotic effect being due probably to its greater molecular weight; it seems to have a sedative action on the mucous membrane of the entire nose and throat. This has been observed for some time as regards the pharynx. As the internal administration of the bromides is occasionally useful in tinnitus, I have thought it worth while trying its effect locally by blowing the fumes into the middle ear. Of course I do not suppose that this would benefit tinnitus of nervous origin, but it might be useful where congestion of the middle ear was the cause. As yet I cannot speak positively as to its effect in this way. I have, however, at present three cases of chronic catarrh of the middle ear with tinnitus which have resisted all the usual remedies. Each of these patients experiences a temporary diminution in tinnitus after applying the fumes through the catheter.¹ The strongest hydrobromic acid (33 per cent. gives off no vapor. I failed to produce any fumes by drawing air through such a solution and mixing it with ammonia. It is, therefore, evident that the ordinary apparatus for producing the chloride would be of no use for generating the bromide of ammonium.—*Dublin Journal of Medical Science*, March, 1889.

TINCTURE OF STROPHANTHUS.—DR. HERMAN HAAS has made a careful study of the action of tincture of strophanthus upon the visible, tactile, and graphic cardiac impulse. Fraser's tincture was used in doses of ten to thirty, or even up to fifty drops. No dangerous symptoms or cumulative action appeared, the appetite improved under its administration, which is contrast to digitalis in many cases. With other observers, he found the pulse slowed, and the patients improved under its use. As a diuretic it was successful in cases in which digitalis had been without avail. In order to observe the effect of strophanthus on the cardiac impulse only, three patients were used who showed a cardiac impulse which could be recognized by the eye and hand, when the patient was lying down; care was taken to observe the effect of a sitting posture or

standing upon the cardiac impulse; curves of both the cardiac impulse and the respiration were taken at the same time.

Before giving any dose it was necessary to study carefully the cardiograms characteristic of that individual. After this had been done, thirty to seventy drops of tincture of strophanthus were given, distributed over one or two days; curves were then taken for several successive days. After the effect of the new drug had passed off, it was repeated, and after a sufficient number of observations had been taken, and an interval allowed, digitalis was given, and the cardiograms of the two drugs were compared.

The results of the observations in all of the above (more than twenty cases) were very similar. It seems that five hours after the administration of tincture of strophanthus the character of the apex beat changes, it becomes ten to twenty beats slower per minute; the heart beat is quieter, and the impulse is weaker. The softening of the blow in the intercostal spaces is noticeable both to eye and finger, as well as to the open hand applied to the chest. In all cases in which there was not considerable hypertrophy of the heart, its lessened activity rapidly went so far that the point of cardiac pulsation was found only with difficulty, or not at all. This action was observed in all cases for a longer or shorter time, according to the dose or the amount of hypertrophy.

Dr. Haas considers the action of strophanthus to be one that diminishes the activity of the heart's muscle, as well as of the muscular layer of the blood-vessels; an action, in other words, not similar to that of digitalis, but directly the opposite. He thinks it doubtful in the light of his observations, if strophanthus increases the blood-pressure, notwithstanding Fraser's observations showing that the heart's muscle is stimulated to make stronger contractions under the influence of this drug.—*Deutsches Archiv für klinische Medicin*, vol. xliii, p. 353.

TREATMENT OF CHRONIC PHARYNGITIS.—In an admirable article by PROF. B. FRÄNKEL, of Berlin (*Therap. Monats.*, Nov. 1888), stress is judiciously laid upon individualization of treatment to suit individual cases, instead of routine measures adopted for universal use. Thus treatment suitable for hypertrophic cases injures atrophic cases, and *vice versa*, while the management of the transitional stages demands an experienced judgment. Precedent disease of the naso-pharyngeal region and of the nasal passages requires topical treatment at the same time; and its relief by such measures is sometimes followed by spontaneous recession of the morbid processes in the oropharyngeal region. At the same time it is incorrect to attribute general pharyngeal catarrh to precedent disease of the nose and of

¹ The condition of one patient remains unchanged. The other two are much improved (Feb. 16th).

naso-pharynx, as has been so much urged by several American writers.

The first indication in treatment is that of the cause. Hence, obstructions in the nose must be combated to restore nasal respiration, and disorders of the mouth and teeth must be corrected. The surroundings of the patient must be modified when at fault, as well as any injurious avocation. habit, or mode of diet or of living. Proper clothing and underclothing are necessary to secure immunity from susceptibilities to cold. As to constitutional treatment, little is to be expected, but change of climate is often of great benefit.

Topical treatment is of chief importance, even in health resorts. The choice of topical agents, and the proper methods of employing them, are carefully detailed.—*American Journal of the Medical Sciences*, March, 1889.

COLOR REACTIONS FOR FREE HYDROCHLORIC ACID IN THE GASTRIC CONTENTS.—SCHAEFFER (*Zeitsch. f. klin. Med.*, B. xv. 162, 1888) reviews the different color reactions for hydrochloric acid, the principal ones of these being, he says, 1, the aniline colors; 2, tropäolin; 3, Congo-red; 4, Mohr's reagent; 5, Uffelmann's test; 6, Günzburg's reagent. Congo-red he considers of no value, for, as Boas has shown, lactic acid will produce the same blueing as hydrochloric acid does. Uffelmann's carbolated-iron reaction is not at all delicate for the inorganic acid. Moreover, a yellow color is produced by a mixture of lactic and hydrochloric acids in certain proportions. For lactic acid the test is delicate, provided no glucose be present, with which it will produce the same tint; and glucose occurs in every stomach when the starches have been ingested.

Mohr's reagent is claimed to be reliable, and the author admits that it is so, in so far that no other substance but hydrochloric acid will give with it the peculiar coloration. His experiments have shown him, however, that it is far from delicate, and that it often fails to reveal the acid when other tests show its presence. Tropäolin is uninfluenced by any organic acid, and is very delicate, especially when used in the form of a tropäolin paper. It is decidedly to be preferred to Mohr's test, though it is not so sensitive as the methyl-violet and Günzburg's reactions.

Of the aniline colors, methyl-violet is the only one largely used, the others not having been found satisfactory. It is very delicate, but unfortunately not reliable, since other substances will produce the same change of color. Especially is it true that a 5 per cent. solution of lactic acid (a strength not so seldom found in the stomach) and of peptone will produce it. The changing from violet to blue may occur, therefore, when there is not a trace of hydrochloric acid present, but the absence of this change is a

positive proof of the absence of the acid. Günzburg's reagent is composed of 2 grams phloroglucin and 1 gram vanillin, dissolved in 30 ccm. alcohol. One or two drops of this are mixed with the same quantity of the fluid from the gastric contents, and heated gently in a shallow porcelain dish. At the edges of the fluid, as it is rolled back and forth, there develops a deep red color if organic acids are present. The author has made careful trials of this reagent, and finds that when the red color does not appear, the other reactions for hydrochloric acid are also absent. He also details his experiments in full which convinced him that the Günzburg reaction was only absent when there was a complete absence of digestive power in the gastric secretion, depending on a diminution of the free hydrochloric acid. The reaction is not produced by any other body occurring in the gastric secretion than free hydrochloric acid, and is not interfered with by the presence of any other substance. The acid may be present and yet not answer to the test; it being combined with inorganic and organic bases. Thus, in carcinoma ventriculi, if hydrochloric acid be added to the gastric contents, some of it will disappear, having replaced the lactic acid in its combinations and set it free. In these cases, of course, the phloroglucin-vanillin test is negative; but it is always positive when any free hydrochloric acid *capable of digesting* is present. This last clause is, after all, the most important one, for whether any other form of the acid occurs is a matter of indifference from a clinical standpoint.

PREVENTION OF SUMMER DIARRHŒA IN CHILDREN.—DR. L. EMMET HOLT says (*Medical News*, Feb. 23, 1889): The treatment of follicular ulceration of the intestine is extremely unsatisfactory. I believe that the great majority of these cases are fatal. Certainly, I have never seen at autopsy in a child anything which resembled a cicatrized follicular ulcer. Successful treatment must be in the nature of prevention. Prevention must have regard to all the milder intestinal catarrhs.

Regarding neglected diarrhœas during dentition, so much has been said recently that it is scarcely necessary to enter here again a protest. There is to my mind no more reason why an intestinal catarrh should not be treated, and, if possible, cured during dentition than at any other time. The fact that a child with whooping-cough is extremely liable to bronchitis and pneumonia has never been given as a reason why these complications should not be treated promptly and energetically when they arise.

Is an intestinal catarrh ever salutary? This is questionable. A number of loose movements may be of advantage to expel undigested food or other irritating materials from the intestine, but

that a persistent intestinal catarrh, even if not severe, is an advantage to any child at any period remains to be proven. The medical profession should take strong ground against the prevalent popular opinion, that so long as the general health is not affected, an intestinal catarrh is not only of no importance, but may, during bronchitis or dentition, even be beneficial, and that to cure it might be injurious. It is in such cases as these that though amenable to proper treatment in the earlier stages, when allowed to run on, as they often are for weeks or even months, the foundation for grave and even fatal forms of diarrhoeal disease is often laid.

The prophylactic treatment involves then the early recognition and intelligent treatment of all the forms of dyspeptic catarrh; in other words, it means that we must secure proper digestion, and this depends chiefly upon proper feeding.

Our attention has been repeatedly called of late to the importance of seeing that our milk and other infant foods are pure and free from germs and putrefactive products. This is all important. Another danger which has not been often enough emphasized is overfeeding. During the past two years I have been trying to get at some exact data regarding the proper amount of food which an infant, who is artificially fed, should receive at the different periods. This has been studied, first, by measuring carefully at autopsies the capacity of the stomach; and, secondly, by weighing healthy infants who were nursed at proper intervals, before and after they were put to the breast. While I have not yet accumulated sufficient statistics for publication, still enough has been learned so far as to show that the figures given in most of our books are altogether too large, and that the vast majority of hand-fed infants are *very greatly overfed*. Difficulty and failure may result from this fact where every other condition for success has been attended to.

In conclusion I would emphasize the following points:

1. Children should not be overfed at any time, but especially not in summer.
2. At this season, also, every dyspeptic catarrh should be attended to; many of these are promptly curable by merely clearing out the intestine and then cutting down the quantity of food.
3. Should an intestinal catarrh, even a very mild one, continue for two or three weeks, one may be pretty certain that he has something more than a functional disorder to deal with.
4. Every mild catarrh should be looked upon as the possible precursor of a severe type of intestinal disease, either near or remote.
5. In the treatment of all diarrhoeal diseases it should be borne in mind that there is something more to be considered than the bacteria and the products of decomposition, viz., the anatomical changes.

MILROY'S MEDIO-TARSAL AMPUTATION.—At the meeting of the Surgical Section of the Medico-Chirurgical Society of Glasgow on January 25, DR. MILROY, of Kilwinning, exhibited a patient upon whom he had performed a new medio-tarsal amputation, and gave the following account:

On the evening of September 7, 1885, I was called to attend John Young, æt. 19, who had sustained a severe injury to the foot. I learned that a piece of iron about 2 tons in weight had fallen upon the back of his right foot. This weight had crushed and abused the tissues and bones so much, that amputation was considered absolutely necessary. The joint between the internal cuneiform and scaphoid was opened by the falling metal, and the cuboid was broken. The strong plantar tissues remained intact. On proceeding to amputate I left the scaphoid, disarticulated the cuboid, and then dissected a long flap from the sole of the foot. The dressings were first changed on the sixth day, when everything looked well. Progress from this time was uninterrupted. In less than a month the stump was perfectly healed. A short time afterwards he was allowed to go about on crutches, which he by-and-by threw aside, took for a short time to walking-sticks, and finally walked without any assistance. Nearly three and one-half years have elapsed since I performed this operation, and the cicatrix is no nearer the sole of the foot than it was six months after the operation. This young man can walk twenty miles at a stretch. He is working in a foundry where he requires to be on his feet for ten or twelve hours daily, still he complains of no pain in the stump. He walks with a slight spring, he has little or no halt, and wears an ordinary boot. I attribute these happy results to leaving the scaphoid bone. This operation may have been performed hundreds of times, for aught I know to the contrary. It is not, however, taught in our schools, or mentioned in our ordinary textbooks. In the Scotch schools we are told that if we cannot perform a Lisfranc, we should amputate at the ankle-joint by a Syme; at any rate we should keep clear of Chopart. I have in this instance kept clear of the much tabooed Chopart and of Syme also. This stump, to my mind, is superior to a Syme, and much superior to Chopart. There is a little arch formed by the scaphoid, astragalus, and os calcis. The weight of the body comes down almost on the keystone of this little arch. The scaphoid undoubtedly falls from the original position which it occupied in the ordinary and larger arch of the foot, but not so far as to bring the cicatrix under. I find that in such a case as this it falls about 25°, and the os calcis is raised the same. Now, had I made a Chopart instead, no arch would have been left, and the astragalus would fall through 35°, whilst the os calcis would be raised the same. This makes a very great difference, and would be cer-

tain to bring the cicatrix under; besides, the weight of the body no longer falls on the centre, but gives an advantage to the tendo Achillis of about 2 to 1. These facts, then, render this amputation far superior to Chopart's; but it is also superior to Syme's in this—the length of the limb is maintained; he has not that limp peculiar to a Syme; he does not require to wear anything but an ordinary boot; his base of support is greater; and he has, as I have already said, a slight spring. With these few remarks I wish to commend this operation to the consideration of you hospital surgeons, whose experience in operations amongst the tarsal bones is much greater than mine.—*Glasgow Medical Journal*, March, 1889.

FRACTURE OF TWELFTH RIB.—MR. JAMES CANTILE, of Hong Kong, reports two cases of this very rare injury.

Case 1.—On January 2, 1889, a man, the worse for drink, fell from his bed, a height of $3\frac{1}{2}$ feet, on to a spittoon. The violence of the fall was such that the stoneware spittoon was broken in two. Not until the next day did the patient find inconvenience or pain. On the third day after the accident, he came under my observation, when a fracture of the left twelfth rib was evident. The rib was fractured 2 inches behind its tip; the distal portion of the bone was freely movable, and its broken end posteriorly overlapped the proximal portion slightly. Crepitus was evident both to touch and hearing, and to both the patient and myself. There were no complications. An encirclement of flannel gave sufficient support to render the patient more comfortable.

Case 2.—A patient came under my care, in the out-patient room, Charing Cross Hospital, in June, 1882, with fracture of both twelfth ribs. The history given was that of a fall backwards on to the edge of a plank, about 2 feet from the ground. The plank caught the patient across the loins, or rather exactly on the twelfth ribs. The fractures were palpable both to the bystanders and the patient, and the signs and symptoms coincided almost exactly with the fracture recorded under Case 1. No complications arose. The treatment was simply that of support by a flannel bandage, and the bones united with only a small knob of callus around the seat of fracture.

In the same clinic as Case 2 a case of fractured right eleventh rib was met with.—*British Medical Journal*, March 9, 1889.

THE CONTAGIOUSNESS OF PNEUMONIA.—In a long article on this subject NETTER reviews the epidemics of pneumonia which have been recorded, and adds a few other instances which have come within his own experience. His most important conclusions are as follows:

1. Pneumonia is a contagious disease of para-

sitic origin, and is transmissible either directly or by the intervention of a third person, or by inanimate objects, such as wearing apparel, etc.

2. The pneumococci are not destroyed by desiccation, and are diffusible through the air, but not to great distances, at most the interval between three hospital beds. They maintain their virulence for a period which has not yet been definitely determined, but probably never more than three years.

3. Contagion is possible through the entire course of the disease and even after recovery.

4. The period of incubation averages from five to seven days, but may vary between one and twenty.

5. Patients who have passed through a pneumonia are dangerous both to themselves and their neighbors, as living micrococci may be found in their saliva many years after. Thence in part the epidemic appearances of the disease in certain families during long periods, and also its frequent recurrence in certain individuals who have once survived it.

6. Rigid quarantine of the patients seems unnecessary, but other patients and healthy persons should not be brought into too intimate relations with them. The sick-room must be kept well ventilated and clean, the sputum disinfected, and the cocci lurking in the mouth destroyed so far as possible.—*Boston Med. and Surg. Journal*, February 21, 1889.

POSOLOGY OF SOME OF THE LATEST REMEDIES.—From a lengthy compilation in *Nouveaux Remedes* for February, embracing a number of drugs which, while comparatively new, are no longer novelties to the pharmacist or physician, we select the following, giving in the first column the maximum single dose for an adult, and in the second the largest quantity that may be safely administered in the course of twenty-four hours:

Article	Maximum dose.	Amount that may be taken in a day.
Acid cubebic	16.00 grs.	80 grs.
Acid sclerotic	1.00 gr.	4 grs.
Adonidine	0.1 gr.	0.3 gr.
Amylene hydrate	80 minims.	1.50 grs.
Anemonine	0.50 gr.	60.00 grs.
Apiol	16.00 grs.	1.50 grs.
Apocodeine	0.50 gr.	60.00 grs.
Arbutine	16.00 grs.	
Arsenic bromide	0.16 gr.	0.10 gr.
Aspidospermine muriate	0.05 gr.	1.50 grs.
Baptistine	0.05 gr.	3.00 grs.
Berberine sulphate	1.00 gr.	240.00 grs.
Boldogluin	60.00 grs.	60.00 grs.
Butyl chloral	16.00 grs.	0.25 gr.
Chrysarobin	0.08 grs.	4.00 grs.
Convallamarine	0.10 gr.	2.00 grs.
Cotoine	0.50 gr.	30.00 grs.
Ethoxycaine	10.00 grs.	1 dram.
Ethyl bromide	20 minims.	1 dram.
Ethyl iodide	20 minims.	16.00 grs.
Euonymine	8.00 grs.	1.50 grs.
Homatropine	0.50 gr.	10.00 grs.
Iridine	3.00 grs.	30.00 grs.
Pareirine hydrochlorate	8.00 grs.	15.00 grs.
Parthenine	3.00 grs.	0.33 gr.
Picrotoxine	0.10 gr.	0.20 gr.
Silver cyanide	0.08 gr.	
Silver iodide	0.33 gr.	5.00 grs.
Solanine	1.50 grs.	
Tribromide of allyl	8 minims.	

—*National Druggist*, March 15, 1889.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00

SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, MARCH 30, 1889.

THE SENSIBILITY OF THE BLADDER.

In a communication on the "Sensibility of the Bladder in the Normal and Pathological State," made to the Académie des Sciences, on March 14, PROFESSOR GUYON said that in the normal state the sensibility of the bladder is manifested only when the desire to micturate is felt. To determine under what physiological conditions this desire is produced was the object of some researches undertaken by him. These researches have led to the following conclusions: 1. In the physiological state the desire to urinate is felt only under the influence of tension of the vesical walls. 2. Contraction of the vesical muscle precedes immediately the manifestation of this desire, which is perceived only when this contraction is carried to a certain degree. 3. The desire to micturate does not depend upon the action of a sort of elective sensibility, having a special centre in a determined point of the mucous membrane of the neck or body of the bladder; this sensation is situated in all parts of the organ.

In the normal bladder, says Guyon, sensation or contact is *nil* or obtuse. There is no sensibility to liquids that are unirritating; for solid bodies sensation is obtuse. Whatever be the position of the subject of the experiment, and whatever the movements of the body, the contact of the urine is never perceived. The same is true of warm water, boric acid solutions, and of weak solutions of nitrate of silver that do not cause immediate irritation. The subject of the experiment is never aware of the injection into the bladder of a

liquid at a temperature of about 18° C., but can distinguish between hot and cold fluids, and irritating fluids; the desire to urinate immediately succeeds this sensation. The interval separating the contact-sensation from the desire to urinate is proportional to the degree of the sensation. When a tepid liquid is injected to the degree of tension, the desire to urinate occurs. Supple instruments introduced into the bladder cause no sensation except in the urethra; nor do the extremities of bougies and sounds cause sensation in the bladder. Rigid instruments cause an obtuse sensation, which sometimes appears to be more pronounced near the neck, but does not cause desire to urinate. This desire is felt only secondarily, and is caused by repetition of the contact, sometimes by reason of its prolongation *in situ* or under stronger pressure—but especially on repetition, or by successive excitations. These experimental results are seen in practice. The normal bladder is indifferent or but slightly sensitive to contact. It invariably responds to tension by creating the desire to urinate. The bladder has not what may be called an anatomical capacity, but a physiological capacity—a capacity proportional to its sensibility—this capacity being variable, even in the normal state, and regulated by diverse conditions, physical or psychic. It is not the quantity of liquid that the surgeon introduces, but the reaction it determines that awakens the sensibility of the bladder. Anæsthesia shows the difference between contact-sensation and tension-sensation; under anæsthesia the first is abolished, but the latter remains.

It may be regarded as an established fact, says Guyon that tension is followed immediately by contraction, and this by the desire to urinate. A certain degree of tension may create the desire; but if the liquid be left in the bladder the desire ceases. *A little more liquid may be injected now*, when the desire again occurs, and again ceases. The surgeon may utilize this cessation of contraction to increase gradually the quantity of liquid introduced, if, as in a case of suprapubic cystotomy, he desires to distend the bladder.

It is a well-known that Küss and Duval are of the opinion that the desire to micturate is created by the flowing of a small quantity of urine into the deep portion of the urethra, and thier theory is generally accepted. Guyon claims that this portion of the urethra is insensible to the contact

of liquids. The first portion of this region, he says, is very sensitive; the second, or prostatic portion, is moderately sensitive to contact. Active pressure upon the membranous portion, repeated contacts, and faradization, when made from without inwards or *vice versa*, never create the desire to urinate; at the entrance to the bladder these manœuvres create the desire in some subjects. But this desire, always transient, becomes definite only when an instrument, carried into the bladder, is brought into repeated contact with the body of the organ. Hence, says Guyon, it is excitation of the urethral face and of the ring of the neck, not of its vesical face that causes a *transient* desire. Pressure *en masse* of the region of the neck produces the same effect. The neck of the bladder and the adjoining portion of the urethra have then, in the physiological state, less sensibility than the body of the bladder; and they are insensible to the contact of liquids.

In the pathological state the sensibility of the bladder is characterized by exalted sensitiveness to tension, and by more or less acuteness of sensibility to contact. Lively sensibility to contact, says Guyon, constitutes a pathological state. For diagnostic purposes it is very important to determine the degree and localizations of this morbid sensibility. The effects of distension in the physiological state are redoubled in the pathological state. The pain caused by exaggerated tension is hurtful to the bladder in the pathological state, and exercises a reflex action on the kidneys. In the pathological state, therefore, all tension and distension of the bladder should be carefully avoided. In painful states of the bladder Guyon has substituted instillations for injections, when it is necessary to use a moderately irritating liquid. He believes that in operations the object of which is to combat a grave painful state, section of the bladder itself is preferable to section of its neck, since he believes that in painful states of the bladder what has been supposed to be a contraction of the neck is really a contraction of the body of the organ.

FAITH-CURE IN THE COURTS.—At a recent trial of two "faith-cure apostles" in Sioux City, Iowa, for practicing medicine without a license, the Judge instructed the jury to find for the defendants, since under the laws of Iowa it was no crime for a person to pray for his afflicted neighbor.

THE UNION OF MEDICAL SCHOOL AND UNIVERSITY.

"Some of the advantages of the Union of Medical School and University" was the subject of an address delivered at Yale University last June, by Professor WILLIAM H. WELCH, of Johns Hopkins University. It is a hopeful and gratifying circumstance, says Dr. Welch, that within the last few years universities in this country and in England have shown an awakened and enlightened interest in the advancement of medical science and the promotion of higher medical education. Among the most notable evidences of this interest is the recent organization at the great universities of Cambridge and of Oxford of medical departments, not as detached schools, but as integral and coördinate parts of the universities. The vivifying influence of this intimate connection has been made manifest by zeal for research, equipment of laboratories, improved methods of instruction, and a more orderly and systematic scheme of study.

In Dr. Welch's opinion the union of the medical school and university will be a step in the direction of higher medical education. "The assumption by independent schools of medicine of the power of granting the doctor's degree, without any control from a university or from the State, is a main reason in this country for the lack of uniformity in medical education, for the enormous number of medical schools beyond all necessities of the community, for the ease with which medical degrees can be obtained, and for the consequent degradation in the significance and the value of the degree of doctor of medicine."

Of the 92 regular medical schools in the United States, 48 are medical departments of or affiliated with universities or academic colleges, and 44 are without such connection. Of the 13 Canadian schools, 12 have such connections, in all cases with universities, not colleges, and one is independent. Of the 48 American schools connected with academic schools, in about half the number of cases the academic connections are schools scarcely known beyond the boundaries of the States in which they are situated. In about the same number of cases, probably more, the medical colleges have such connection in name only, being in no way controlled by the regents of the universities or the trustees of the colleges. In one case a "university" has two separate and

distinct medical departments. The fertile American soil seems to be as productive of "universities" and "colleges" as of potatoes, and too often the greater attention is given to the proper planting and growth of the last-named.

While almost 50 per cent. of American medical schools have no academic connection, more than 90 per cent. of the Canadian schools have university connections; and the Canadian schools, as a class, rank with the less than half a dozen first-class American schools. Says Dr. Welch: "If we attempted to analyze the cause of German prominence in medical education, we should find that many causes combine to produce this result, but certainly not the least of these is the fact that medicine in Germany is taught only as a department in a university. Independent medical schools do not exist there. Something more than a feeling of piety for old forms has preserved the historic association of the medical with the other faculties. There is a conviction that the highest interests of medical education are best subserved by this association." Naturally we cannot expect to transfer the German university methods bodily to our soil, nor is such transference essential to a higher system of medical education. The school of physiology developed at Cambridge under Michael Foster is clearly traceable to academic influences, says Dr. Welch. It is of course possible that such results are attainable under favorable conditions, by independent medical schools; "but experience demonstrates that the highest development of medical education is attained to-day as it has been in the past, by the university system."

The mere formal connection of a medical school with a university is insufficient to bring about the results of which we speak. "There must be a union in spirit as well as in name. The influences of university methods and ideas must manifest themselves in the medical department, sympathetic relations must exist with other departments through the connecting link of all, the philosophical faculty, and the coöperation must be obtained of those physical and natural sciences, physics, chemistry, zoology, comparative anatomy, and botany, knowledge of which is essential to a complete medical education, and to scientific research in every branch of medicine."

What are the specific advantages that belong to the university system of medical education? The discussion of this question we must defer until a later date.

PROGRESS OF HIGHER GENERAL EDUCATION FOR MEDICAL MEN.

When, in 1859, the Chicago Medical College—Medical Department of the Northwestern University, was organized on the basis of three years of graded medical studies and a moderate standard of preliminary education for admission, it was comparatively rare to find, in the classes attending the medical colleges, especially in the newer States, regular graduates from universities, colleges or scientific schools.

The change that has taken place in this regard was well illustrated by an item in the public Commencement exercises of the above-named College on the 26th inst. Dr. Ephraim Ingals, one of the most enlightened and liberal members of the profession in this city not connected with any medical college, had instituted a prize of \$100, to be awarded the member of the graduating class who should attain the highest average standing in the three departments of literature, science, and medicine; the same to be determined by a competitive examination under the direction of a committee of the Faculty. A prize of \$50 was also offered by Dr. G. Wheeler Jones, of Danville, Ill., to the member of the class who should attain the next highest position as shown by the same examination. The Dean of the Faculty, in announcing the decision of the committee awarding these prizes and in presenting the graduating class to the President of the University, took occasion to remark that not only were all those who entered the prize contest graduates of literary colleges of high standing, but 18, or 40 per cent. of the whole graduating class, had been admitted to the medical college on diplomas from literary and scientific colleges, and of the remaining twenty-eight, all had pursued academic or collegiate studies from one to five years after leaving the ordinary public schools and before commencing medical studies. We hope the time will soon come when no person will be permitted to enter upon the study of medicine without presenting proof of a good literary and scientific education.

REGULATING THE SALE OF PROPRIETARY MEDICINES.

A bill has been introduced into the Ohio Legislature to prohibit the manufacture and sale of proprietary medicines in the State. Should the bill pass a fine of from \$500 to \$5,000 will be laid on

the manufacturer of such medicines, and their sale will be punished by a fine of from \$100 to \$300. In several other States than Ohio the question of the manufacture and sale of proprietary medicines is being agitated, and efforts being made to lessen the evils that undoubtedly arise from the indiscreet and indiscriminate use of the proprietary compounds that take up the larger part of the shelf-room in our drug-stores. Whether the bill before the Ohio Legislature is Constitutional or not we will not pretend to say. A less drastic measure, and one that, it appears, would meet with less opposition, would be the adoption of the French method of dealing with this question. There a "secret remedy" or proprietary medicine, before it is offered for sale, must be submitted to a Committee of the Académie de Médecine, which condemns the article, thus prohibiting its manufacture and sale, or approves of it and fixes the maximum price at which it may be sold. This Committee has the formula, and the method of preparation submitted to it, and the preparation is carefully investigated by an expert chemist. The *New York Commercial Advertiser* thinks that "if on every bottle of proprietary medicine offered for sale there should be a label giving a correct account of the substances contained in the compound, people would know what they were swallowing, and would swallow it at their own risk. The State has the right to require this, and the people could not quarrel with it." The State has undoubtedly the right to require this, but it is sheer nonsense to suppose that the people would then know what they were swallowing. And if people will swallow stuff in total ignorance of its composition, it is scarcely likely that what little knowledge they could gain from a label would exercise any influence.

EDITORIAL NOTES.

THE FORTIETH ANNUAL MEETING OF THE ASSOCIATION.—Both the preliminary programmes of many of the Sections already published and a recent letter from the Chairman of the Committee of Arrangements show that the preparations for the meeting at Newport are progressing in a most efficient and satisfactory manner. Not only the Rhode Island State Medical Society, but the profession in Boston and throughout the New Eng-

land States are affording gratifying indications of a warm interest in the coming meeting.

INDIANA STATE MEDICAL SOCIETY.—The Secretary of this Society, Dr. E. S. Elder, of Indianapolis, requests us to call special attention to the fact that the next annual meeting of that Society will be held commencing on *Wednesday*, May 1, 1889, a wrong date having been previously given.

DEATH AFTER VACCINATION.—In the *British Medical Journal* of March 9, 1889, the following case is cited: On September 24th the Public Vaccinator at Billesdon Union, near Leicester, vaccinated a little girl with humanized lymph in two places on the left arm. On the seventh day he visited her, finding the vaccine pustule well developed at each point, but broken and the lymph running down the arm, with an areola of redness around each, three-quarters of an inch in width. The next day the areola had assumed a more distinctly erysipelatous character. From this time it spread rapidly with much swelling; the hands and feet became densely œdematous; cellular abscesses formed near the elbow and in the back, and death ensued on November 19th following.

The origin of the vaccine lymph used was readily traced by Dr. Ballard, and found to have been free from contamination with the infection of erysipelas, but the house in which the child lived and its surroundings were in a very filthy and unsanitary condition. To these local conditions, Dr. Ballard attributed the unfortunate result. The responsibility for the death, was, therefore, properly attributed to the neglect of duty on the part of the local Sanitary Board.

DR. JEROME COCHRAN, State Health Officer of Alabama, has written an open letter to the *Birmingham Age-Herald* on the subject of yellow-fever disinfection, and in regard to the bitter and ungenerous manner in which he was denounced when he said that one of his patients in Decatur, last year had died of yellow fever. Dr. Cochran says: "It is argued that Decatur ought to be disinfected as a matter of policy, to quiet the apprehension of the people and adjacent States. It is precisely this spirit of apprehension, and the spirit of panic that follows in its train, and which is mischievous beyond power of words to give expression to, that stands in need of rebuke. Let

the people be taught again a great lesson. Let them learn that all the artificial means of disinfection that have so far been employed against yellow fever have proved to be comparative failures, while the great disinfectant which Nature sends to our aid—the beneficent frost of our winters—has never been known to fail." It is a matter of great doubt whether sanitarians will agree with him that artificial means of disinfection against yellow fever have proved to be comparative failures. If frost alone is to be depended upon there seems to be no hope for Cuba.

DR. KEI OKAMI, of Japan, and DR. SUSAN LA FLESCHÉ, of Nebraska, are among the recent graduates of the Woman's Medical College of Pennsylvania. The former is the first Japanese woman, and the latter the first Indian woman to study medicine. Dr. La Flesché was an Indian girl, who learned the English language at a reservation school, and completed her studies at the Indian School at Hampton, Va.

MEDICAL LEGISLATION.—Oregon and Montana Territory now have acts regulating the practice of medicine. The Oregon act, which is now a law, requires all practitioners to "possess a diploma of graduation, or a certificate from the board of medical examiners," according to the Albany (Oregon) *Herald*. In Montana, says the Bozeman *Chronicle*, the bill "requires the examination of all physicians in the Territory." We have no more explicit information than the above.

MEDICAL LEGISLATION IN TENNESSEE.—We learn that there is before the Legislature a bill to regulate the practice of medicine in the State of Tennessee. The bill is very stringent in its provisions, and traveling doctors or peddlers of drug nostrums or patent medicines are required by its terms to pay \$100 a month to the State. It provides for a State Board of Medical Examiners, who shall issue certificates or licenses to practice, either upon examination or upon proof that the applicant was a practicing physician prior to the passage of the act. These certificates shall be recorded in the office of the county court clerk. Practicing medicine without such a certificate shall subject the offender to a fine of \$100 for the first offense, and \$200 for each subsequent offense. The same penalty is attached to "any itinerant vendor of any drug, nostrum, ointment or applica-

tion of any kind intended for the treatment of disease or injury, or who may by writing, printing or other methods, profess to cure or treat disease or deformity by any drug, nostrum, manipulation or other expedient," who does not pay to the Board of Examiners \$100 a month for such privileges.

THE LATE OUTBREAK OF SMALL-POX IN MINNEAPOLIS, it appears, was very summarily and successfully dealt with by Health Officer Kilvington. As soon as a case was announced, a consultation was called to determine if the disease was small-pox. That being settled, the patient was removed to the quarantine hospital for treatment. The house where he lived was quarantined, and all the people directly exposed were confined in it. Dr. Kilvington's assistants then began to look up all people indirectly exposed, and vaccinated them. Quarantine houses had guards stationed about them, who allowed no one to go in or out during the season of quarantine. The quarantine people were vaccinated, and during the time until it could be determined whether the vaccination would take, they were supplied with food. When the vaccination took, the person under quarantine was bathed, given new clothing in place of the old, which was burned, and he was then discharged. When a house had been emptied of people under quarantine, the bedding and curtains were burned, sulphur burned in all the rooms, and the walls sprayed with corrosive sublimate. None of the inspectors or guards were allowed to enter any of the houses under quarantine, when there was danger, and the doctors that did the vaccinating saturated their clothing with the corrosive sublimate before and after entering a house where there had been small-pox. The clothing and bedding were either paid for at a reasonable price by the board of health, or were replaced by new articles. In one of the houses quarantined, there were 31 laboring men, who were inclined to object to the rules of quarantine. One escaped, but he was taken back when found, and a guard, with a rifle and instructions to shoot, should he attempt to escape, was put over him. Since January 13, 6,000 people have been vaccinated, and the schools, public and private, have been systematically visited, and unvaccinated children vaccinated.

FATAL RESULTS FROM SANTONIN.—The newspapers contain the report of two cases of death from santonin, given as a vermifuge to a little boy aged 3 and a girl aged 5 years. It appears that both deaths occurred within a few hours after the medicine was given. Santonin was administered also to a girl of 9 years, of the same family, and she was made dangerously ill.

REGISTRATION OF BIRTHS.—DR. C. A. LINDSLEY, of New Haven, Secretary of the Connecticut State Board of Health, and Superintendent of Registration of Vital Statistics, has sent circulars to the physicians in the State calling attention to the law in regard to the prompt return of births, and to the fine provided for failure to make such returns. He has also sent the circular to every registrar in the State, with a request to make note of physicians neglecting to make returns. It is said that the law is disregarded to a disgraceful extent, and the State Board of Health proposes to make an effort hereafter to secure the monthly returns called for by the law. Every physician recognizing the importance of having birth statistics accurately recorded, should cheerfully and promptly comply with the law.

ASSOCIATION NEWS.

American Medical Association. Fortieth Annual Meeting.

To be held in Newport, R. I., June 25, 26, 27 and 28, 1889.

SECTION ON OPHTHALMOLOGY.

Papers have been positively promised by the following members:

Dr. Robert Tilley, Chicago, Ill.
 Dr. E. J. Gardiner, Chicago, Ill.
 Dr. S. S. Bishop, Chicago, Ill.
 Dr. F. C. Hotz, Chicago, Ill.
 Dr. H. Gifford, Omaha, Neb.
 Dr. J. F. Fulton, St. Paul, Minn.
 Dr. J. J. Chisolm, Baltimore, Md.
 Dr. J. L. Thompson, Indianapolis, Ind.
 Dr. A. E. Prince, Jacksonville, Ill.
 Dr. LeRoy Dibble, Kansas City, Mo.
 Dr. J. H. Thompson, Kansas City, Mo.
 Dr. A. R. Baker, Cleveland, Ohio.
 Dr. Dudley S. Reynolds, Louisville, Ky.
 Dr. Robert Sattler, Cincinnati, Ohio.
 Dr. C. M. Hobby, Iowa City, Iowa.
 Dr. J. W. Wright, Columbus, Ohio.
 Dr. F. B. Tiffany, Kansas City, Mo.

Dr. R. L. Thompson, St. Louis, Mo.
 Dr. P. D. Keyser, Philadelphia, Pa.
 Dr. W. G. Edwards, Nashville, Tenn.
 Dr. A. W. Calhoun, Atlanta, Ga.
 Dr. H. W. Williams, Boston, Mass.

Some of the above named authors have given in the titles of their respective papers. Those who have not should do so at once that the title of each paper may be published in connection with the name of its author.

Shall we have a short-hand reporter to take down all discussions? Or will members who discuss papers take the pains afterwards to write out what they may have said? Discussions ought to be published in connection with every paper, so that the different views entertained upon the subject of which it treats may be presented to the reader. Will *all* who are members of this Section please write the President or Secretary their wish on this point?

G. E. FROTHINGHAM, President,
 Ann Arbor, Mich.

G. C. SAVAGE, Secretary,
 Nashville, Tenn.

PRELIMINARY PROGRAMME OF THE SECTION ON MEDICAL JURISPRUDENCE.

All members desiring to contribute papers to this Section are requested to correspond with its officers.

First Day.—"History of Medical Jurisprudence," by Judge Amos G. Hull, of New York.

Second Day.—"Tests of Insanity," by H. N. Moyer, M.D., of Chicago.

"Monomania," by Clark Bell, Esq., of New York.

"Legal Decisions on Insanity"—Chairman's Address, by Jas. G. Kiernan, M.D., Chicago.

"Massachusetts Insanity Laws," by T. W. Fisher, M.D., of Boston.

"Illinois Insanity Laws," by Harriet C. B. Alexander, M.D., of Chicago.

Third Day.—"Legal Aspects of Inebriety," by T. L. Wright, M.D., of Bellefontaine, Ohio.

"Inebriate Criminals," by T. D. Crothers, M.D., of Hartford, Conn.

"Social Aspects of Alcoholism," by E. C. Spitzka, M.D., of New York.

Fourth Day.—"Spinal Concussion," by S. V. Clevenger, M.D., of Chicago.

JAS. G. KIERNAN, M.D., Chairman,
 Central Music Hall, Chicago.

S. C. EVANS, M.D., Sec'y., Baltimore, Md.

The names and addresses of Section Officers and other officers of the Association are printed on advertising page 25.

Special Attention is called to the following Rules of the Association:

It shall be the duty of every member of the Association who proposes to present a paper or

report to any one of the Sections, to forward either the paper, or a *title* indicative of its contents, and its *length*, to the Chairman of the Committee of Arrangements at least one month before the annual meeting at which the paper or report is to be read. It shall also be the duty of the Chairman and Secretary of each Section to communicate the same information to the Chairman of the Committee of Arrangements concerning such papers and reports as may come into their possession or knowledge for their respective Sections, the same length of time before the annual meeting. And the Committee of Arrangements shall determine the order of reading or presentation of all such papers, and announce the same in the form of a programme for the use of all members attending the annual meeting. Such programme shall also contain the rules specified in the By-laws and Ordinances concerning the consideration and disposal of all papers in the Sections.

No report or other paper shall be entitled to publication in the volume for the year in which it shall be presented to the Association, unless it be placed in the hands of the Committee of Publication on or before the first day of July. It must also be so prepared as to require no material alteration or addition at the hands of its author.

Every paper or address received by this Association, or by a Section, and ordered to be published, and all reports of Committees, and all plates or other means of illustration, shall be considered the exclusive property of the Association, and shall be published and sold for the exclusive benefit of the Association.

ORDINANCES.

Resolved, That the several Sections of this Association be requested, in the future, to refer no papers or reports to the Committee of Publication, except such as can be fairly classed under one of the three following heads, namely: 1. Such as may contain and establish *positively* new facts, modes of practice, or principles of real value. 2. Such as may contain the results of well-devised original experimental researches. 3. Such as present so complete a review of the facts on any particular subject as to enable the writer to deduce therefrom legitimate conclusions of importance.

Resolved, That the several Sections be requested, in the future, to refer all such papers as may be presented to them for examination by this Association, that contain matter of more or less value, and yet cannot be fairly ranked under either of the heads mentioned in the foregoing resolution, back to their authors with the recommendation that they be published in such regular medical periodicals as said authors may select, with the privilege of placing at the head of such papers, "Read to the Section of the

American Medical Association on the day of 18 ." (Vide *Transactions*, vol. xvi, p. 40.)

Resolved, That no report or other paper shall be presented to this Association unless it be so prepared that it can be put at once into the hands of the Permanent Secretary, to be transmitted to the Committee of Publication. (Vide *Transactions*, vol xvii, p. 27.)

SOCIETY PROCEEDINGS.

Obstetrical Society of Philadelphia.

Stated Meeting, Thursday, February 7, 1889.

THEOPHILUS PARVIN, M.D., IN THE CHAIR.

DR. LONGAKER reported a case of

PLACENTA PRÆVIA.

The features of interest in this case are: *a.* Hæmorrhage at the seventh month in P. P. Lateralis. *b.* The patient was in a septic condition when first seen, a week after commencement of hæmorrhage. She was also very anæmic. *c.* Turning by the bi-polar method was at once done, and a living seven months' fœtus was born. *d.* The patient made an excellent recovery, and was sitting up in two weeks. *e.* The surface of the placenta showed traces of fatty degeneration. It contained a clot the size of a walnut and several days old. Placenta prævia occurred at her last confinement, three years ago, and she came near losing her life from hæmorrhage both before and during labor.

Case of Diseased Placenta, Anasarca of Fœtus and Hydramnion.—Mrs. Z., æt. 28. Second ipara at seventh month of pregnancy. Her first child lived but a short time. The amniotic fluid was in excess, and child and placenta weighed 5¾ pounds. About one-third of the placenta was the seat of a well-marked change. There are foci, cheesy in the centre, gradually passing into apparently healthy tissue. These were more or less continued, involving a V-shaped segment. The abdomen of the child was so distended as to cause a slight obstacle to its delivery. Œdema of the extremities was slight. Both the pleura and pericardium were distended. The greater part of both lungs was solid, and on section a purulent fluid exuded from the cut surface. The child's extremities were rigid and flexed. It had been dead but a short time. Careful auscultation had, however, failed to detect fœtal heart sounds during labor.

DR. HOFFMAN reported a case of

PYOSALPINX.

I shall go into the history of this case with rather more attention to detail than would be

warranted, were it not for some features of previous history and treatment, which render it in some respects more than ordinarily instructive.

Mrs. G., æt. 28, came to me for examination in August, 1888. Her history at the time was unsatisfactory, giving simply record of a discharge for a long while, and great pelvic pain, especially on the right side. A miscarriage was admitted. Examination showed a painful mass, bound down to the right cornu uteri, so tender that exact mapping out was impossible. I doubt, however, whether even under an anæsthetic an accurate diagnosis could have been made of the condition as revealed by operation, owing to the involvement of intestine. Intestinal adhesions always increase the size of ovarian and tubal tumor, rendering the decision of absolute extent impossible. The left side also was evidently involved, but was not so painful as the right. I made no great effort to determine the extent or nature of this involvement, inasmuch as her condition was evidently one for operation, as I told her, saying at the same time that treatment would be entirely useless. She left my office crying and I saw no more of her until two days before operation, December 18, 1888. I then ascertained that after seeing me she had gone to four other physicians, one whose diagnosis was uterine displacement, and whose treatment was the introduction of a pessary, strangely enough with the result of apparent relief. She then visited the clinic of the Woman's Hospital, and was comforted with the assurance that there was nothing the matter with her and that she should go home and have a baby. She received like advice at the University. An up-town specialist, into whose hospital she afterwards went, with the intention of operation "for a ruptured blood-vessel," the then diagnosis, told her there was no necessity for operation, advising her that she was wise not to have submitted to it at my hands, promising her at the same time that she should have a baby, and to promote this end, the uterus was curetted. Time wearing on, she again visited her last adviser, who now made the diagnosis of a ruptured blood-vessel, and advised operation for its "tying." At this juncture she again fell into my hands, much reduced from excessive hæmorrhage for three weeks. I did not examine her, but urged immediate operation, to which she consented. Two days later abdominal section was done. Assisted by Dr. J. Price, the right side was first explored and the ovary and tube found everywhere densely adherent. Enucleation was accomplished with much difficulty, and when attempt was made to apply the ligature, the tissues were found so rotten that the blood-vessels alone withstood the tension of the silk. The right cornu uteri was so involved that it was simply a mass of abscess tissue, and had to be curetted in order to free it from the necrosed portions. The bleeding was now so profuse that

the application of a new ligature was necessary. The second ligature was wholly about uterine tissue. The left side was then examined and found even more extensively involved than the right, but without the presence of pus. The adhesions were more dense, but the tissues not being necrosed, there was no difficulty in obtaining a good pedicle. The involvement of the intestines was so great that I fully expected a fæcal fistula to result, in spite of careful suturing. The right tube contained pure pus. A drainage-tube was introduced and kept in the incision a little more than a week. The only complication was severe inflammation of the bladder, and phlebitis of left internal saphenous vein. The patient is at present moving about her room.

The history of her trouble, since obtained, is interesting. She was married at 16. Six weeks after her marriage her husband deserted her. Her baby lived seven months, going blind some time before its death, having sores and becoming very emaciated. At this time she began to have a bad discharge, which inflamed her private parts, which were also much swollen. Had great pain on urination. She did not have intercourse for twelve months after the birth of her baby. She then contracted an alliance with another man, and afterwards within three years had two miscarriages, and a still birth at eight months. Her hair has fallen out, but aside from this she has had no other sign of syphilis. The question here arises, what was the origin of the pelvic trouble? Was it gonorrhœa, syphilis, abortion, or the after-effects of labor? That there are chances for believing, according to the various aspects of the case, that perhaps one, then the other of all these agencies, entered into the causation of the disease, will, I believe, be not disputed. Whether or not it is so conceded, matters very little, however, so far as this case is concerned. That all these factors may bring all the various forms of pelvic disease cannot be rationally disputed. That we can dogmatically affirm that any pelvic lesion is brought about by any one of these causes, with the exception of gonorrhœa, as proved by the presence of the gonococcus, is not to be for a moment entertained. The fact is, we can have the symptoms of pyosalpinx simulated in all its essentials by an entirely different condition, to-wit: tubercular disease of the appendages. To consider the relative frequency of each of these factors in the production of pelvic disease, it is not my purpose, but it requires more than the dogmatic assertion of any operator to prove that this, that or the other cause is always at the bottom of the lesion. But while the etiology of the trouble may be obscure, in a well-defined lesion like the one under observation, the diagnosis ought, in most instances, to be made, or if it cannot, the question concerning it should be gone over, chances for error discussed, and once for all have

it confessed that the subject of pus-tubes and ovaries is not too hackneyed for consideration before a Society such as this. We read of the infallible bi-manual examination, which is able to pick up a Fallopian tube or distinguish varicose veins in the broad ligament, and then suddenly are confronted by failures such as I have here recorded. The fact stands out that the diagnosis insisted upon, by the men who are accustomed to "claim everything," is a myth, and as Mr. Tait says, fit only for library papers. It is incredible that the diagnostician who can recognize, map out and differentiate the Fallopian tubes, should fail to recognize a mass the size of a small fist. Let us by all means have diagnosis, but let it be *diagnosis*, not myth. In this case the diagnosis, promises and treatment well nigh lost the woman her life. She wanted a baby and she was promised one. She nursed the delusion for three months. Promises may hold patients, they do not work cures, nor save reputable medicine the slur and suspicion of quackery. I believe in the present case that the curetting was directly responsible for the involvement of the uterine tissues. In the presence of tubal disease there is no excuse or palliation for the use of the curette. I believe that the so-called operation of "dilating and scraping" is responsible for much tubal and ovarian trouble that would otherwise remain quiescent. I have now a case under observation where this procedure was resorted to, without relief; then electricity was tried, and to-day the patient is worse than ever, with operation her only relief.

DR. HORATIO R. BIGELOW read, through the Secretary, a paper on

APOSTOLI'S PLACE IN GYNECOLOGY.

After some complimentary remarks on Apostoli himself Dr. Bigelow went on to discuss the armamentarium necessary for carrying out the electrical treatment. He thought it necessary to have a galvanic battery, a faradic battery, a collector, a galvanometer, intra-uterine electrodes for both currents, and one for carrying both the positive and negative of the induced current within the uterus; bulbous charcoal-pointed electrodes of various sizes for galvano-caustic applications, intra-uterine platinum electrodes, and large bulbous vaginal and rectal electrodes. The belly-plate could be made of potter's clay, in which the metal plate could be buried, or better is the plate devised by Martin, of Chicago. A good galvanic battery should have a slight chemical action and great constancy. The Léclanché cells or those of Daniell he thought the best. With 36-Léclanché cells, without a rheostat, a strength of from 300 to 350 milliampères can be gotten. He thought that the collector was invaluable, and that to measure the dosage exactly was an absolute prerequisite of success. The best galvanometer was

that made by Gaiffe. The best faradic battery that of Gaiffe, with a chloride of silver pill, and the induced currents of high tension from the long thin wire was the one to be generally used within the uterus.

"The induced current penetrates the tissue profoundly by reason of its high tension, but, contrary to physical laws, the continuous current of low tension has a longer and more profound action. We have proved the diffusion of the electric currents, and that the galvanic current propels itself through organic tissues, its influence being felt at remote points, the current *never remains limited between the two poles*" (Ominus). "If we now consider the difference that exists between continuous and induced currents during their constant passage we find that it is not difficult to distinguish between them, as the line of demarcation is clear. The induced current acts for an exceedingly short time during its passage. It produces at each instant of passage a greater or less excitation and causes molecular shock. The induced current acts mechanically as an excitant, but the continuous current penetrates more gradually the tissues, but more profoundly, acting chemically in such a way as to produce molecular orientation and chemical combination" (Ominus). The induced current traversing the liquid, semi-liquid, or solid substances that go to form the human body, produces no chemical action whatever, simply a mechanical molecular disturbance. The continuous current, however, not only produces its chemical action at the poles, but this molecular disintegration and orientation is propagated throughout the zone between the poles. Just what the galvano-caustic action is that dissipates a tumor is not yet known—whether it coagulates the albuminoids or creates interstitial inflammation, he does not know. *It does reduce the tumor and it remains for us to find out the why?* He believed that time would demonstrate a change of *cell life* in addition to the purely chemical action, which takes place around the poles. In Apostoli's clinic the induced current is not often used. It has a wondrous effect, however, upon the ovarian pain in hysterical women. Dr. B. has now seen 20 cases of this kind and every woman received immediate relief after a séance of ten to fifteen minutes. He has seen a large number of bleeding fibroids, but has, as yet, to see one that failed to respond immediately to the continuous current, the positive pole being within the uterus. Apostoli often carries the current up to 350 milliamperes without any discomfort to the patient. It is most important that every part of the lining membrane of the uterus should be treated, and every hæmorrhage, no matter how severe it may be will resist. Dr. B. affirmed that the treatment would very appreciably diminish the size of fibroids and at times entirely dissipate them. He quoted cases to prove this point. Punctures were

made into the tumors to the depth of from 1-3 centimetres, with a lance-pointed steel needle, the galvano-negative caustic being used, usually. Everything was religiously clean and antiseptic. None of the patients had any bad symptoms. He affirms that Apostoli's method arrests hæmorrhage, diminishes size, relieves pain and improves nutrition, without endangering life, better and more surely than any other method, and asks, why then resort to Tait's operation of excision of the appendages? The catarrhal forms of salpingitis yield kindly to the simple action of the continuous current, one pole in the uterus. Dr. B. is not yet ready to offer any decided opinion in regard to pyo-salpingitis. He however cited several cases where negative punctures of the tube relieved or cured the cases. In metritis the galvanic or faradic current should be used as one or the other agrees with the patient. Apostoli says that "this treatment applied according to his double or bi-polar method is an excellent and sometimes sovereign remedy in certain cases (recent subinvolution, chronic metritis in its first stage), inefficacious or at least very insufficient in others (such as chronic metritis in its latter stages), and endometritis in any form." In endometritis the continuous current and the positive pole within the uterus are used. He cited some cases of fungoid endo-metritis which had been cured. Dr. Apostoli faradized every woman, even when under an acute attack, who was suffering from peri-uterine inflammations, observing certain rules which he has laid down. In the sub-acute stage he uses, first, bi-uterine faradization, with a current of tension when the inflammation begins to give way he used the intra-uterine continuous current, beginning first with the positive pole and following with the negative as as soon as he is sure the patient can bear it. In the chronic stage use the continuous current and galvano-puncture (negative), making the puncture in the diseased part itself. In old cases of perimetritis, with much tenderness around the utero-sacral ligaments, much relief may be obtained by the vaginal electrode in the posterior fornix, while the negative pole is in the abdomen, using the induced current of high tension.

DR. JOSEPH PRICE reported

A YEAR'S WORK IN A MATERNITY HOSPITAL.

In making this report I desire briefly to call attention to the amount of work done, the routine treatment of patients, and a few alterations which have taken place in the building. During the year 1888 there were 184 deliveries in the Retreat. Of these patients 69 were primiparas. There were 186 children born, including two sets of twins, 9 of these infants were stillborn, 102 were males, 84 were females. There were 13 forceps deliveries. Labor was induced in 2 cases in the eighth month. In 1 case a contracted pelvis and

in one the presence of a large uterine tumor. There have been no deaths of mothers in the Retreat for a period of nearly five years, furnishing a series of 540 deliveries without a death, the last death being from puerperal convulsions in a patient suffering from chronic Bright's disease, and who had had convulsions in five previous labors. Since this death there has not been a case of puerperal septicæmia in the institution. The great success attending the work of this Maternity is due to the strict enforcement of the law of cleanliness. Everything and everybody in the house is clean and jealously kept so. This system was enforced by Dr. Goodell, and has been carried out on the lines laid down by him. The routine treatment of patients is as follows: the patient on entering the house is given a hot soap bath, dressed in clean underclothing, and given a clean bed in the waiting ward. If necessary, a laxative is given and the bowels kept soluble during her waiting period. Thereafter, until her confinement, she is obliged to take at least two hot soap baths per week and to wear clean clothes. She is allowed to do such light work about the house as the physician may deem advisable, and is encouraged to take as much open-air exercise as circumstances will permit. Every effort is made by the officers and employes of the institution to make it as cheerful and homelike as possible. When ready for the delivery room the patient is again given a hot soap bath and an enema and a vaginal injection of 1 to 2000 bichloride of mercury solution. She is clothed in a clean night-robe and drawers and placed upon a new clean delivery bed. Scrupulous cleanliness is observed in all manipulations of the patient, and after delivery a second vaginal injection is given, and a vaginal suppository of iodoform is introduced. The patient's person is carefully cleaned and all soiled clothing removed, the binder applied, a clean set of night clothes put on and the patient placed in a new clean bed in the ward. All of the soiled articles are immediately removed from the delivery room and a new bed made up for the next patient. The patients in the ward are carefully observed by the nurses, but no unnecessary handling or interference indulged in. The patients remain in the ward until they are able to be up, when they are removed to the convalescent ward. As the ward is emptied, the beds are burned and all the bedding most carefully cleansed. No soiled linen (as draw-sheets, diapers, napkins or other articles of clothing) is allowed to remain in the ward, but when soiled is immediately placed in a covered receptacle and removed from the ward and building. No sponges, wash-rags or absorbent cotton are used in the house. Corrosive jute supplies the place of these articles, being clean, soft, remarkably absorbent and cheap; it is destroyed immediately after use. The pads used to absorb

the lochia are also composed of jute and are likewise destroyed after use. The beds in the wards are of new straw. All discharges from the delivery room are immediately burned. All bedding soiled beyond cleansing or contaminated by purulent or specific discharges is likewise burned. In short, every effort is made to keep the house perfectly pure and sweet. The arrangement of the house permits of rotation in the use of the wards, so that a ward, once emptied, is not again used until three others have been filled. In the meantime it is most carefully and scrupulously cleaned and thrown open to the atmosphere. A similar system is pursued in the convalescent wards and delivery room. A few alterations in the building have very markedly increased the effectiveness of the institution and the comfort of its inmates. In the first place, the bath-room and water-closets have been removed from the building proper and placed in the towers in the rear. The plumbing is as near perfect as modern sanitary science can make it. The verandas have been enclosed in glass, forming large, light, airy corridors about the rear of the building, and furnishing a distinct circulating atmosphere between the house proper and the wards and the water-closets. The ventilation of the entire building is simply perfect. The capacity of the house at present is about fifty patients per month, and, when a few contemplated changes are made, the capacity will be doubled and the institution rendered as nearly an ideal maternity hospital as is practicable.

DR. WM. GOODELL said it had always been a matter of great regret to him that he did not adopt this system a year or a year and a half before he did. He supposed it was partly due to the conservatism of old age and partly to a series of some forty deaths from bichl. poisoning he had collected. Tarnier's reports of the results following the use of this agent so impressed him, that he was led to make the change. Before he adopted the system which has just been detailed by Dr. Price, he had once as many as five deaths in about 150 cases, four of these due to septicæmia. Latterly hardly a year would elapse without the occurrence of one or two deaths. When he first started everything about the institution was new and clean, and for several years he had the best record of any maternity hospital in the world. After the building and articles had become old, deaths began to occur. He tried carbolic acid, but it proved of little value. After beginning the use of corrosive sublimate injections, iodoform suppositories and antiseptic pads, he did not have a death from septicæmia. The only death was one from Bright's disease of the kidneys. During this time he had been consulted perhaps a dozen times in the course of a year to see women dying from puerperal septicæmia. He thought that, in private practice, it would not be needful

to follow out so strictly the details of the method as it is practiced at the Preston Retreat. For instance, the antiseptic pad and the iodoform suppositories might be done away with. He believed, however, that every practitioner should syringe out the vagina both before the birth of the child and after complete delivery, with a bichloride solution of 1-2,000. The hands should also be disinfected. He was called in consultation by a physician in the country who had had four or five deaths from sepsis in a short time. I found he been treating a case of phlegmonous erysipelas. He knew of another physician who had lost, he thought, seven cases—certainly five, from dressing a sloughing case of erysipelas. Antiseptic measures would probably have saved all these cases.

DR. HENRY LEAMAN would call the attention of those who have the opportunity of observing the physiological processes of labor to one point, viz.: presentation. It is very difficult to accurately determine the presentation, particularly of the face, brow, and posterior presentations. These observations should be verified by examination of the abdomen previous to labor and the location of the fetal heart sounds. They should also be confirmed by observation of the position of the head in the act of delivery. A mistake is readily made in posterior presentation. Posterior presentations are, he thinks, more common than we are in the habit of considering them. His object in speaking was to say that every case of labor was a case for the minutest observation. There was another point which he thought should be observed, that was the hour of the day at which labor occurs. There is, he thought, probably some connection between arterial pressure and the time of delivery. In recording the hour there would be an allowance to be observed in cases where the forceps were used. There was another point not mentioned, and that was the position of the succedaneum and its extent. These have to do with the natural process of labor and aid in determining the presentation.

DR. J. PRICE said he was as anxious about a labor as he was about a section, when he read reports of maternity hospitals with a mortality of from 2 to 27 per cent. This troubled him not a little now that he controlled a large maternity hospital, one in which Dr. Goodell had left a record of 275 cases without a death. He sees a labor case as frequently as he does a drainage after abdominal section. When this hospital was new, Dr. Goodell had a run of 250 cases without a death from any cause. This was the longest run of any institution at that time. After this deaths began to occur. Later he adopted the gospel of cleanliness, and with what results he has just told you; the results are now precisely the same as he left them. In regard to Dr. Hirst's question as to whether the same results might not be obtained by simpler methods, Dr. Price said

that they did not differ much in regard to the use of solutions and that portion of the treatment. The toilet of the house was perhaps just as systematically carried out at the Philadelphia Hospital as at other institutions. The pad which he had shown would hold a pint of fluid. It saved an immense amount of laundry work. It was now coming into use as a menstrual pad and was very convenient for ladies traveling. In private practice the mortality was greater among the rich than the poor. Among the poor he had had 700 deliveries without a death. He thought the difference was in the water-closets which the better classes had in their houses. The mortality throughout the country was large. In a small town in Ohio, with a high elevation and beautifully located, he had recently known of two deaths from septicæmia. Last summer he had been called to see puerperal cases nine times, and all died.

Gynæcological Society of Boston.

Annual Meeting, Thursday, January 10, 1889.

THE PRESIDENT, HORACE C. WHITE, M.D.,
IN THE CHAIR.

Dr. John H. Mackie, of New Bedford, was elected to Corresponding Membership.

PATHOLOGICAL SPECIMENS.

DR. A. L. NORRIS presented a *tumor of the breast*, which he had removed from a woman, æt. 53 years. It had been three months forming, was extra-mammary, and of the size of a goose egg. Blood had oozed from the nipple, which contained broken-down blood-cells and cancer-cells. The axillary glands were not involved. The entire mass was removed. It was a schirrus which Dr. N. had never before seen as extra-mammary. The entire gland was also removed.

DR. F. L. BURT reported a case of *fibroid complicated with hydro-salpinx*, and exhibited the specimens. The patient had been under treatment about a year. There had been troublesome hæmorrhages. Laparotomy was performed for the removal of the diseased tube and ovary, and for hastening the menopause. Glass drainage tubes were used. The patient made a good recovery.

DR. E. C. KELLER reported a case which had been under observation since last August. The patient had been treated for localized peritonitis. Severe pain at first was one of the leading features of the case. On the 27th of December the patient had a severe attack of flooding, was blanched and fainted. On January 3, laparotomy was performed. There was a cyst near the left broad ligament. The ovary of that side was filled with blood. The hæmorrhage was from the Fallopian tube. The case appeared to be a

hæmato-salpinx. In reply to inquiry from Dr. Stevens, whether the tube was ruptured, Dr. Keller said the tube was not ruptured, and that the hæmorrhage must have come from a ruptured vessel. The original clot where the hæmorrhage first began was plainly visible in the specimen as exhibited by Dr. Keller.

DR. HENRY O. MARCY exhibited a *dermoid cyst, weighing about ten pounds*, which he had removed from a woman about 35 years old; was assisted in the operation by Drs. Nelson and Cole. The abdomen was nearly the usual size at term. She had been under the care of two physicians who were so assured of pregnancy, that she had prepared the wardrobe for the expected infant. The diagnosis was doubtful, but the uterus, about three inches deep, could be differentiated from the tumor which was semi-solid. The tumor was removed with extreme difficulty, as it was more solid than fluid. The broad ligament was sewed off with the double stitch. The left tube was dilated with fluid to the size of a large sausage and the ovary was diseased. They were removed. The dermoid tumor was full of bony points, and had many cysts filled with colloid material. Patient made a good recovery.

Dr. Marcy also showed the *ovaries and tubes* which he had removed from a woman, æt. 30 years. She was very weak and hysterical, suffered great pain at her menses, and had been an invalid for six or seven years. The pain at the menses was such that she took morphine subcutaneously every two hours until a grain had been used.

Dr. Marcy further exhibited an *extra-mammary tumor of the left breast*, which he had removed from a widow, æt. 43, who had never been pregnant. There was no history of injury. It began a year ago as a small nodule to the left of the nipple. It is now double-fist size. There was no glandular enlargement in the axilla. Histologically, the tumor is a myxoma, the first case he had ever seen. It was behind the gland and was firmly attached to the pectoral muscle.

EXHIBITION OF NEW INSTRUMENTS.

DR. GEORGE W. JONES exhibited an *Improved Gynæcic Harness for the Retention of the Patient during Gynæcic or Rectal Operations*. Doubtless it will be conceded by most of you, who have had experience in these operations, that the most convenient position in which to place the patient for operation, is the dorsal; for in that position, the uterus and other organs are in the most normal position. Under these circumstances, however, you have also realized that the legs and feet of the patient must be taken care of and held out of the way, in order that the operator may do with facility and comfort whatever his hands find to do. To accomplish this and attend to the ether, at least three or four competent assistants are required; and such an array of heartless doctors

before a timid patient, is many times trying to her nerves, and sometimes may be detrimental to the successful performance of a simple operation. In order to be useful, an appliance must be simple at the same time that it supplies requisite qualifications. This harness fills the requirements mentioned. It consists of the following parts, viz., a yoke, made by a piece of brass tubing twelve inches long, into each end of which another piece twelve inches long and of smaller size, slides perfectly. These two smaller pieces are curved in the proper manner for one-half their length, and a hook is attached to the curved end. As these pieces slide into the larger tube, they are held by thumb-screws at any required distance. The rest of the apparatus consists of a stout piece of webbing with a ring attached to each end, to go around the neck of the patient. To this webbing are fastened two short pieces, which go under the axilla and fasten to the rings in the ends of the neckpiece, thus preventing it from slipping up. Through each of these rings also, a narrower piece of webbing slides freely, with a ring at each end to fasten to the yoke before described. In using this harness, the patient being in the dorsal position, the webbing should be adjusted to the shoulders, then with the legs flexed upon the abdomen, the yoke can be placed under the knees, and attached to the rings at each end of the tapes. These tapes may be shortened or lengthened at will while in use, or they can be removed entirely in an instant if necessary in case of accident. The whole apparatus can be boiled or rendered aseptic in any manner most desirable. It can be taken apart in a moment and carried in the hand-bag with little additional weight or trouble.

I have also what I have styled the *Aseptic Universal Needle Holder*. It is eight and one-half inches long, with a smooth symmetrical handle, a unique spring-catch and a button joint. One of the special features of this instrument is the formation of the jaws. The upper half or blade is rounded on the inner or usually flat side, and it contains a groove of sufficient size to hold firmly a Hagedorn or any other needle, curved or straight. It is also of extra length, an advantage readily appreciated by any one, who has attempted to suture high up in the vagina with the ordinary short holder. Its symmetry and simplicity, and the fact that it can be taken apart and cleaned in the most thorough manner in a moment, render it the most aseptic needle holder made, and a valuable addition to the aseptic gynecological or other instrument case.

The next instrument is an *Improved Dilator for Rapid Dilatation of the Cervix Uteri*. Although, as you see, it is very much like the "Wiley Dilator," yet it has some advantages over that instrument. One of the handles is curved, so

that the hand of the operator does not obstruct the view of the part operated upon. Another improvement, and the principal one, lies in the joint, which is movable or a sort of toggle joint, which can be changed at pleasure, and extreme dilatation obtained if desirable. Moreover, if greater dilatation is desired at the external os, it may be obtained without too great tension being made on the internal os, and *vice versa*. The instrument may be taken apart in a moment and rendered perfectly aseptic. Codman and Shurtleff will supply any of these instruments.

THE PRESIDENT, DR. HORACE C. WHITE, then delivered

THE ANNUAL ADDRESS,

which was listened to with marked attention and interest by the Society. He said: I will occupy but little of your valuable time in presenting a few rambling thoughts and suggestions, with regard to our Society.

In our eager search for scientific facts, and in the busy whirl of the routine of daily professional duties, time passes so rapidly that it is well sometimes to stop and look over what has been accomplished, and changes have taken and are taking place.

The Gynecological Society of Boston has just completed its second decade. Twenty years ago, when this society, which claims to be a pioneer in its department, was formed, it would have been an easy task to have reviewed a year's progress, and perhaps that which had been written strictly upon this department of Medical Science, then in its swaddling clothes, in a single address, and not have exhausted the time allotted. A few ovariologists, whose daring shocked their more conservative brethren, and whose percentage of death-rate would hardly have made their patients in haste to accept their services, constituted a large part of the abdominal surgery of that day. These were the advanced guard of the serried columns who now assault the well recognized foe, from every point of attack, and with numberless implements of warfare.

This Society was not only a pioneer, but it has done its share in causing Gynecology to be recognized as an honorable science, and to reclaim it from opprobrium, and to place it upon a respected equality with other departments of medical science. Its founders were able, earnest, and conscientious men, who struggled with difficulties, which we of to-day, can hardly realize, and to them great credit is due for the honorable standing of the Society.

With familiarity in the use of anesthetics and with the more recent discoveries which have given birth to antiseptic surgery, great advance has been made. The field has been continually broadening; like the progressive series it shows wonderful increase, until now it would seem

nearly impossible to bring anything like a complete review of a year's progress into a single address. If we should select a single operation and attempt to review all that has been said, written and done, we should exhaust our time long before we exhausted our subject. If a new principle of treatment or theory of disease were selected, we should still have the same almost unlimited mass to select from for discussion. Materials and methods of their use, as for instance sutures, needles and dressings, would be a fruitful source to draw from.

The use of electricity in its various forms, with its varied and ingeniously constructed batteries, its application as a remedial agent, both in medicine and surgery, its use to strengthen feeble vitality or to destroy diseased tissue, to promote growth or to retard overgrowth, to restore to life those who are apparently dead, or to take the life of those who are condemned to death, not mentioning its use as an accessory or convenience, such as lighting our houses and streets, ringing our door-bell whether we are awake or asleep, and summoning us, over the wire, by day or by night, with many other uses, this magical power, yet in its infancy, so far as its scientific and proper use is concerned, may, by the efforts which are being made to measure its power and estimate the resistance which it is capable of overcoming, be brought within the range of dosable remedies, and be a very important factor in the treatment of human maladies. A course of lectures might be written on this subject.

We recognize the fact that knowledge is increasing, that science is developing new truths, but what would he say now, who so long ago said "of making books there is no end?" If all that was written was truth unmixed with error, if there was no dross with the precious metal, we might soon expect the millenium of scientific knowledge, judging from the amount written; but while we believe that scientific knowledge is increasing, we cannot close our eyes to the fact that much that is advanced for truth will not stand the actual test. The growth of scientific knowledge like the growth of the body, is a slow process, costing great destruction of the old to bring in the new. Now if a review of a year's progress requires the discrimination between truth and error, a summarizing of what has been taught, that will stand the test of time and experience, then the task would present such a mountain of difficulties and impossibilities that no one would dare attempt to surmount them. It would be much easier and perhaps as profitable to follow the example of Artemas Ward, in his lecture on "The Babes in the Woods;" spend the whole of the time in telling why he did not lecture on this, that and the other subjects, and conclude his lecture by saying he had, therefore, made up his mind to lecture on "The Babes in the Woods."

During the past year we have held ten meetings, with an attendance varying from 25 to 75 per cent. of our membership. When we consider the imperative demands upon the time of a physician, which cannot be regulated by his wishes, and also the fact that two-thirds of our members reside outside of the city, this is not a bad record. We have had at nearly every meeting valuable papers and much profitable discussion. We have also had a large number of interesting and instructive pathological specimens exhibited, with detailed reports of cases and operations. Our by-laws have been revised and printed again with a list of the active members.

In September Dr. H. J. Harriman, who had served the Society as its Secretary so efficiently and faithfully during the past four years, was obliged to resign his office on account of ill health. The Society accepted his resignation with regret. In this connection, allow me to say that our Society records are a feature of which we may be justly proud. From the beginning it has been very fortunate in the selection of its Secretaries. This very important office, which combines the duties of Secretary and reporter, has been filled from the first by men who would be an honor to any medical society, as will be shown by inspection of its records. To Dr. Field, who so long and acceptably filled the office, the Society will be under perpetual obligation for having all the records neatly copied into suitable books up to the expiration of his term of service. I would recommend that this work be continued up to date.

Allow me further to recommend a plan suggested to me by the Secretary, which I think will do much toward keeping up the interest in the meetings, viz.: to have our reports promptly and regularly furnished to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for publication, and to have a sufficient number of "reprints" ordered by the Society so that each member may have a copy. By keeping these and getting them bound, if he chooses, each member will have, not a part, but all of the "transactions." This would serve to interest in the work those who cannot attend the meetings regularly. It would also be a stimulus to each to do his best work. I earnestly recommend this plan for your consideration, believing that it will be economical and valuable.

If the above plan is adopted, I would suggest the inquiry whether we might not enlarge our Society to include a number of physicians throughout New England, who are interested in Gynecology. They might be able to attend but seldom, yet they might communicate to the Society their best thoughts and report interesting cases. A careful consideration of these matters is all I ask. I would recommend a revision of our list of corresponding members and a systematic effort to get contributions from them.

I take pleasure in announcing that the records and lists of members have been collected and are now in the hands of the Secretary. Our Society begins its third decade in a prosperous condition. May the future be one of increasing prosperity and usefulness. And now thanking you for the generous assistance you have always given me, and the unmerited honor you have conferred upon me, I will close, bespeaking for my successor the same cordial support which you have given me.

The following were elected

OFFICERS FOR THE ENSUING YEAR.

President—W. Symington Brown.

Vice-President—Augustus P. Clarke.

Treasurer—Charles W. Stevens.

Secretary—Samuel N. Nelson.

Committee on Membership—J. F. Frisbie, E. C. Keller, H. O. Marcy.

Pathological Committee—S. N. Nelson, I. W. Starbird, A. L. Norris.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Acute and Subacute Nephritis—The Academy of Medicine.

It is not often that one has the pleasure of listening to such a model of clearness, conciseness and completeness as the paper read by Dr. Francis Delafield at the last meeting of the Academy of Medicine, on *The Treatment of Acute and Subacute Nephritis*. He acknowledged at the outset that he had no new drug to propose or no new plan of treatment to advocate. It was rather his object to determine, if possible, how plans of treatment and drugs already employed were to be intelligently applied in individual cases of the disease; since it was of importance not only that patients should be cured of their disease, but that this cure should be effected as speedily and as completely as possible, or, if the disease was an incurable one, that life and the capacity for labor and for enjoyment should be prolonged to the utmost.

To give an idea of the methods of treatment ordinarily employed, he thought it would be sufficient to quote briefly from a French, a German and an American authority. These were, Labadie-Lagrave, in the *Nouveau Dictionnaire de Médecine et de Chirurgie*, Strümpell's Practice, and Flint's Practice. Most authors, he went on to say after making the quotations, took much the same view of the treatment; that its main object is to make up for the diminished quantity of urine by acting on the skin and intestines, and that the principal danger of an acute nephritis is the accumulation of excrementitious substances in the

blood. Some authors, in addition, believed that they could rest the kidneys while they were inflamed by producing diaphoresis or catharsis, and that such rest would diminish the severity of the nephritis. Some thought that by a sufficiently large injection of fluids the inflammatory products could be worked out of the kidneys; a procedure which seemed to be analogous to the treatment of scouring the blood, as practiced by some eclectics.

Digitalis, while regarded with apprehension by some, was warmly advocated by others as a diuretic, or as a remedy for the febrile movement. Morphine in considerable doses was employed by some for the relief of uræmic attacks; in small doses by others to relieve vomiting and restlessness; while still others deprecated its use under any circumstances. General bloodletting seemed to be restricted by most to the nephritis of pregnancy, and to the very severe forms of the disease attended from the first with high temperature and cerebral symptoms.

The disposition at the present time to direct attention and the treatment to the symptoms of the nephritis, rather than to the nephritis itself; to the dangers of a diminished excretion of urine, rather than to the bad effects of kidneys in a state of acute inflammation, is so general and decided, that he thought it might be wholesome to look at the subject from the opposite point of view, and to direct attention, not to the functions of the kidneys, but to the kidneys themselves. In order to do this it was necessary at once to separate the cases of acute nephritis from those of subacute nephritis; the condition of the patients being altogether different in the two classes.

1. *Acute Nephritis*.—Most of the cases of acute nephritis met with complicate scarlatina, diphtheria or pregnancy. Less frequently the nephritis complicates one of the other infectious diseases or severe inflammations, or it is a primary lesion. In all cases of acute nephritis one morbid change is constant, viz.: congestion and exudation from the blood-vessels. The exudation consists of blood serum, white blood cells and red blood cells, which escape for the most part into the tubes and are mixed with the urine, to a less extent into the stroma of the kidney. The principal part of the exudate is regularly serum, but in some cases the emigration of white blood cells is considerable, and in some cases with a large emigration of white blood cells the exudation of serum is but small.

Having referred to other lesions that may or may not be added to this constant change in the kidneys, he spoke of the symptoms varying according to the severity of the nephritis, and said that, in the very mild cases, the only symptom was a diminution in the quantity of the urine and the presence in it of the exudate from the kidneys—the albumin, casts, and red and white blood cells. In the more severe cases, he continued, the same changes in the urine exist, and there are

added constitutional symptoms, such as fever, prostration, loss of appetite, nausea, vomiting, and anaemia. In the still more severe cases there are also headache, delirium, stupor, convulsions, labored heart action, hypertrophy of the left ventricle, a pulse of high tension, and dropsy. In the cases in which the urine is suppressed for a number of days the patients develop alternating stupor and delirium, and pass into the typhoid state. The regular duration of a fairly developed acute nephritis seems to be about four weeks. Its natural termination, whether with or without treatment, is in recovery. But the more severe cases may prove fatal; while the cases in which there is from the first a growth of new connective tissue in the stroma are likely to become chronic.

As to the indications for treatment, in the very mild cases evidently no treatment is necessary, except to keep the patient in bed and on a fluid diet. In the more severe cases it is often proper to interfere in order to secure greater comfort and safety for the patient. The first of the different conditions which may call for treatment is the nephritis itself. It is to be remembered that although the quantity of urine voided is small, its quality is good; for it contains a fair proportion of excrementitious solids to the ounce of fluid; that convulsions and coma belong to the early days of a nephritis with scanty urine, while prolonged anuria is accompanied rather with the typhoid state; that the excretion of urine must naturally relieve the congestion of the kidneys, so that it is better for the kidney to perform its functions than to be at rest; that so long as the congestion of the kidneys persists the quantity of the urine will be diminished; and that a considerable diminution in the quantity of urine continued for one or two weeks is often borne perfectly well. It is not necessary, therefore, to pay attention to the diminished quantity and to try to make the skin or the intestines do the work of the kidneys. It is wiser, by relieving the congestion of these organs, to enable them to do their own work; knowing that the moment they begin to do this their congestion will be still further diminished, and that although the nephritis still continues, the excretion of urine may then be sufficient.

Fortunately, we have at our command means by which the congestion of the kidney can be materially reduced for short periods at all events. These means are: causing the blood to collect at the surface of the body by the application of heat to the entire skin; the use of dry cups, or wet cups, or heat over the lumbar region; the empirical use of calomel or sulphate of magnesia in small doses repeated at short intervals until the bowels begin to move; and the use of such drugs as will diminish the increased arterial tension. While the nephritis is still active, however, it is not to be expected that by the use of any means the urine will be brought up to its full normal

quantity, but only that a sufficient quantity will be passed to ensure the safety of the patient. The febrile movement requires no treatment, while the prostration, loss of appetite, nausea and vomiting call only for rest in bed and a fluid diet. The anaemia ought unquestionably to be relieved, but while the nephritis is still active there appears to be no way in which this can be done with certainty. When convalescence is established the anaemia readily improves with the ordinary methods of treatment.

The cerebral symptoms are those to which most attention has been directed. There can be no question that they regularly accompany a contraction of the arteries with increased tension and a labored action of the heart. No matter what views one may entertain as to the cause of this change in the circulation, Dr. Delafield believes that treatment is best directed to the arteries themselves, rather than to the uncertain cause of their contraction. There are, fortunately, he said, drugs which act promptly and efficiently for this purpose, and the most suitable of these are aconite, chloral hydrate and opium; and these are preferably to be given in small doses and at regular intervals, so that their use can be continued for some time. It is wise to watch the condition of the heart and arteries and, as soon as the condition of increased arterial tension is developed, not to wait for the manifestation of the cerebral symptoms, but to try and relieve it at once.

The treatment of a case of acute nephritis resolves itself, therefore, into the treatment of the nephritis itself and of the contraction of the arteries which may accompany it. To carry out this treatment he said he could from experience strongly recommend the following routine: The patient is put to bed and restricted to a fluid diet; the entire skin is washed clean every day; for two successive days drachm doses of sulphate of magnesia are given every hour until 1 oz. has been taken, or the bowels begin to move; after this the tincture of aconite is given in doses of 1 minim every hour. Within a few days the albumin in the urine will have diminished, the pulse will be soft, and the dropsy will have disappeared; but the patient will be anæmic. The milk is now gradually replaced by solid food, and iron and oxygen are given.

2. *Subacute Nephritis.*—The distinction between acute, subacute and chronic inflammations, while an arbitrary one, is often of real convenience, and Dr. Delafield regards this as especially true of nephritis. In acute nephritis, as has been seen, he went on to say, the inflammation is an acute and temporary one attended with congestion and exudation. The interference with the function of the kidney is only with the quantity of the urine; the urine that is produced being of good quality. The symptoms are due to the nephritis itself and to the accompanying contraction of the arterial

vessels. In subacute nephritis, on the contrary, the inflammation is subacute and long-continued; there is no congestion; the exudation is of the profuse, almost dropsical, character that we meet with in other subacute inflammations, such as pleurisy with effusion; and there are permanent changes in the stroma and glomeruli of the kidney. The interference with the functions of the kidney is not with the quantity of the urine, for this is often in excess, but with its quality; the proportion of solid matters steadily decreasing as the disease advances. The symptoms are largely due to the effect of the nephritis on the composition of the blood and the nutrition of the body. The anæmia, the dropsy, and the loss of strength are the prominent features of the disease. Contraction of the arteries is absent, or present only at intervals. The cerebral symptoms are chronic rather than acute. It may happen, however, that in the course of a subacute nephritis there will be exacerbations of the inflammation, during which the changes in the kidney and the symptoms are the same as those of an acute nephritis.

Subacute nephritis is especially common as a primary disease and as a sequel of scarlatina and diphtheria. The patients lose strength, they become anæmic, and they suffer from nausea, vomiting and diarrhoea. There may be inflammation of the retina, and the arteries are for the most part relaxed; but may sometimes be contracted. The cerebral symptoms are more frequently chronic than acute, and dropsy is apt to be a marked symptom. The urine may be somewhat diminished, but is often in excess. The specific gravity and quantity of solid matters excreted diminish as the disease progresses, while the quantity of albumin mixed with the urine is considerable.

Some of the patients continue to get worse in every way, and die within one or two years. Some of them exhibit some or all of the symptoms of the disease for weeks or months; then seem to be partly or completely well; then again become ill, and so may go on for many years, sometimes better, sometimes worse. In some of them acute exacerbations of the inflammation may give for a time the symptoms of acute nephritis. A very few seem to recover permanently. The conditions which require treatment in these cases are: 1, the subacute nephritis; 2, the changes in nutrition and the composition of the blood; 3, the dropsy; 4, the condition of the arteries; 5, the cerebral system; 6, the acute exacerbations of the inflammation.

For the nephritis itself the most efficient treatment is the residence of the patient in a suitable climate. The climate should be warm, and the particular locality selected should be one where the patient can lead an out-of-door life. If the patients remain in a cold climate it will be necessary to confine them to the house for much of the time. Except during the exacerbations of the

nephritis, the patients should take as much of solid foods and fats as they can digest. The excessive use of milk and of the mineral waters is to be avoided. It is possible that the use of opium or of the bichloride of mercury may favorably affect the nephritis. The anæmia is a most important symptom. There is a diminution in the quantity of hæmoglobin and in the number of red blood cells. The most efficient treatment for this is the internal use of iron and the inhalation of oxygen, combined with massage and the relief of constipation. With this treatment in many of the patients the improvement is satisfactory, but in some no such improvement takes place. The dropsy may never be more than an inconvenience, or it may constitute the most distressing feature of the case. It is apt to reach its greatest development with low arterial tension and often with a large excretion of urine. In some cases the treatment of the anæmia and the regulation of the diet will answer at the same time for the treatment of the dropsy. In other cases it is necessary to employ different measures.

When a subacute nephritis has lasted for any length of time the quantity of urea excreted falls to 6 or 7 grains, or even less to the ounce. The patient ought, therefore, to pass .70 or more ounces of urine daily. If it is desired to diminish the dropsy by increasing the quantity of urine it is wise not to increase the urine more than will be sufficient to enable the patient to excrete his 500 grains of urea a day. The quantity of fluid which the patient drinks should be regulated, as far as possible, according to the quantity of urine passed; not allowing the former to exceed the latter. In the extreme cases of dropsy we are obliged to purge, to sweat, to puncture the skin, and to tap the serous cavities. But when these measures become necessary it means that the case is an unfavorable one.

The condition of the arteries and of the left ventricle of the heart should be watched throughout the disease. High arterial tension can often be controlled by nitro-glycerine, chloral hydrate, or opium. Low arterial tension can, theoretically, be heightened by digitalis or ergot, but Dr. Delafield has found no advantage in doing this. To avoid the cerebral symptoms it is necessary constantly to watch the excretion of urea and the condition of the arteries. The quantity of urine should be kept large enough to make up for its diminished solid contents, and increased arterial tension should be at once relieved. The acute exacerbations of subacute nephritis are to be managed in the same way as an attack of acute nephritis.

In conclusion, he remarked that, as he had stated at the beginning, he was not able to offer any new plans of treatment. He had simply tried to show that some of the old methods might perhaps be more intelligently applied, and that,

while symptoms had to be treated, this might be done largely with direct reference to the nephritis.

The paper was discussed by Drs. Jacobi, Loomis, Kinnicutt, Roosevelt, Winters, Lawrence Johnson, and others, and Dr. Delafield closed the discussion. In the course of his remarks he said that he had always found one difficulty about the subject in question. Whenever he commenced to talk about acute and subacute nephritis some one was sure to get off on to the discussion of chronic Bright's disease. He thought Dr. Jacobi had made a very good point in calling attention to the comparative frequency of acute and subacute nephritis. It was not by any means almost exclusively confined to scarlatina, as many practitioners seemed to think, but was met with in connection with many of the other acute fevers, and not infrequently as a primary affection also. Many young laborers went about their work while affected with acute or subacute nephritis, not considering themselves sufficiently ill to take to their beds, and thus very serious injury was liable to result.

As regards the matter of arterial tension, he thought it was necessary to draw a sharp line between cases of acute and subacute nephritis. When the affection was acute there could be no question that the quickest way to reduce the tension was by the use of small doses of calomel or sulphate of magnesia frequently repeated. This relief he believed to be due to the effect of the drug on the nephritis itself. Otherwise it was not easy to see how such agents acted, since in order to secure the best results their use should be suspended as soon as a distinct purgative action was produced. In order to relieve the arterial tension the calomel or sulphate of magnesia should be given every hour, just as in peritonitis. This effect having once been obtained, it could be sustained better by aconite in minute doses than by any other agent with which he was acquainted.

The moment that we had to deal with subacute nephritis the conditions were found to be altogether different, and no good results were to be any longer anticipated from the use of the agents mentioned. Here we employed the class of drugs which dilate the vessels, and nitro-glycerine and chloral hydrate were both efficient for this purpose. The use of digitalis did not apply to acute nephritis at all, and in subacute nephritis the indications for its employment had been very clearly pointed out by Dr. Loomis.

(Dr. Loomis had remarked that whenever in subacute nephritis heart trouble was met with we had a right to resort to digitalis or other cardiac tonics; but so long as arterial tension remained such agents would only do harm. If in any case with a tendency to heart failure the digitalis seemed to increase the quantity of urine voided he thought it ought to be employed, and it was perfectly safe to do so as long as this effect was noticed.

If, on the other hand, arterial tension was present, digitalis would always diminish instead of increase the quantity of urine, and consequently it was clearly contraindicated in any such case.)

At the conclusion of Dr. Delafield's remarks the President, Dr. Loomis, announced that the Academy had secured the refusal of three lots for its contemplated new building on 43d street, near 5th avenue, the price of which was \$90,000.

P. B. P.

MISCELLANY.

LETTERS RECEIVED.

Dr. H. B. Tanner, South Kaukauna, Wis.; Samuel H. Allen, Baltimore, Md.; Dr. Wm. G. Parrish, Burlington, N. J.; Dr. J. A. Freeman, Millington, Ill.; Dr. Ira B. Read, New York; American Oxygen Association, New York; Dr. R. Harvey Reed, Mansfield, O.; Dr. C. H. Bradley, Haverhill, Mass.; Singleton, Bonnel & Co., Chicago; Dr. J. L. Smith, Newport, N. H.; Lehn & Fink, New York; Dr. P. O. Hooper, Little Rock, Ark.; Dr. E. S. Elder, Indianapolis, Ind.; Dr. J. J. Rendleman, Cairo, Ill.; Dr. John B. Hamilton, Washington, D. C.; Dr. L. D. Tompkins, Cassopolis, Mich.; Johnson & Watson, Dayton, O.; E. G. Myers, Granville, O.; Percy Procter, Cincinnati, O.; Dr. Homer Johnson, Oberlin, O.; Dr. C. Rembe, Fayetteville, Ill.; Dr. H. H. Beverly, Pilgrim Lake, Tex.; Chas. E. Matthews & Bro., Chicago; M. J. Backenston, Philadelphia; Dr. E. J. Mathis, Energy, Miss.; Dr. M. R. Smith, McGrawville, N. Y.; Prof. Smith, Lexington, Ky.; Geo. P. Bower, Minneapolis, Minn.; Mrs. L. P. Fitch, Charles City, Ia.; Thos. Leeming & Co., New York; W. P. Marks, Garysville, Va.; Sohleische Gessellschaft für vaterländische, Breslau, Germany; O. L. Denning, Philadelphia; Dr. L. Hummel, Philadelphia; Rubinat Co., New York; Health Restorative Co., New York; W. P. Cleary, New York; National Architect's Union, Philadelphia; H. W. Young, Kansas City, Mo.; Dr. F. J. Thornburg, Cincinnati, O.; Dr. A. C. Wood, Owensboro, Ky.; Dr. W. E. Casselberry, City; A. J. Richer, Montreal, Can.; Jerome Kidder Mfg. Co., New York; Dr. Geo. W. Miller, Girard, Kan.; W. J. Anderson, Edinburg, Miss.; Longmans, Green & Co., New York; Wood Bros., Jacksonville, Ill.; J. B. McBride, C. H. Stansbury, C. T. Hughes, S. G. Sevier, Louisville, Ky.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 16, 1889, to March 22, 1889.

Capt. Richard C. Newton, Asst. Surgeon, leave of absence granted in S. O. 27, November 21, 1888, is extended to include May 22, 1889, by direction of the Secretary of War. Par. 17, S. O. 64, A. G. O., Washington, March 19, 1889.

Capt. Richard C. Newton, Asst. Surgeon, resignation accepted by the President, to take effect May 22, 1889. Par. 18, S. O. 64, A. G. O., Washington, March 19, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending March 23, 1889.

Surgeon W. G. Farwell, detached from the receiving ship "Franklin" April 1, and to the Naval Hospital, Norfolk, Va.

Surgeon R. A. Marmion, ordered to the receiving ship "Franklin."

Surgeon N. McP. Ferebee, detached from the Naval Hospital, Norfolk, Va., and placed on waiting orders.

THE

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, APRIL 6, 1889.

No. 14.

LECTURE.

THE HEATING AND VENTILATION OF THE MANSFIELD SCHOOLS AND CHURCHES.

A Lecture delivered before the Mansfield Lyceum, February 13, 1889.

BY R. HARVEY REED, M.D.,

CITY HEALTH OFFICER, MANSFIELD, OHIO, SECRETARY OHIO
STATE SANITARY ASSOCIATION, ETC.

There are three leading combinations of chemicals that enter essentially into the welfare of the human economy, the absence of either one of which would soon result in death. The adulteration or impurity of either, or a reduction of the normal supply of either one, results in a proportionate injury to the living human organism.

These three combinations are air, water, and food. In previous papers read before this Lyceum and our City Council I have called attention to the importance of a bountiful supply of pure water, and our city authorities have practically demonstrated their appreciation of such a supply by investing the sum of \$190,000 in securing a suitable water supply for our city, which requires an annual outlay of \$5,700 to maintain, saying nothing of the interest on the capital invested in the plant, and yet no one complains, or would ever think of voting to abolish our city water works, which every person concedes to be an absolute necessity.

The importance of a bountiful supply of pure air is second to neither of the other two combinations that must needs be present in order to support human life, and from personal experience and repeated investigations the unwarranted neglect and miserly supply of this, the freest of all of nature's gifts to man, has led me, as your City Health Officer, to inspect the schools and churches of our city, and give you an unvarnished report of their real condition as to heating and ventilation.

In warm countries, where there is little need of protection from the elements, and where open huts serve in place of the "hermetically sealed" houses in our more rigorous Northern climates, there is little need of systems of heating and ventilation, for there the native or his visitor gets a

bountiful supply of God's free pure air night and day, winter and summer, unmolested by the conventionalities of art. Not so in our Northern climates. The open hut is replaced by the device of the city architect, who at once commences to rob our people of their pure air, and study how they can build all sorts of fancy structures of the latest and most approved style, in which they can "hermetically seal" their inmates from the oceans of pure air that surround this "human can they call a house," and thus not only starve them of oxygen, but poison them in their own excrement—the carbonic acid gas they exhale from their stunted lungs at every breath. Could the dead that lie in yonder grave-yard, who have fallen victims to illy planned and improperly heated and ventilated dwellings, lift their voices in one accord against the architects who by their mistakes have forced them to a premature grave, nothing but an Ashland County jury would save them from conviction of murder in the second degree.

In making these inspections I have endeavored to "hew to the line, let the chips fall where they may." I have inspected all the churches, and each room in every school-house in the city, in person, and noted the exact plan by which it is heated and supplied with pure air, or air of any kind, and have tried to briefly point out their faults and also note their good qualities, and will close the paper by giving you a simple, yet scientific method, illustrated by charts and practically demonstrated by a model, whereby you can heat your buildings thoroughly, and at the same time flood them with abundance of pure air.

Before giving the details of these inspections, it is only just that I should say that in the main the people are not to blame for the almost universal defects found in the heating and ventilation of their schools and churches. They are not expected to know, nor to study up those problems, and most naturally depend on the architects for all the plans and specifications regarding their buildings, and hence they are just the persons the sanitarians are looking for, and to whom and of whom they have a word to say. The architect comes to you with a beautiful perspective, every inch of which is elaborately detailed down to the tacks and paint. So much must be stoned from

Cleveland, Cincinnati, or New Hampshire; so much must be brick of the latest pattern, burned with *hickory wood*; this particular part of the edifice must be finished with boards cut from the cedars of Lebanon, that part must be furnished with choice butternut from the valleys of the Mohican, the windows must be dappled with glass of many colors, the walls ceiled in with the best of plaster, and furnished with a specially hard finish; the floors must be of the finest oak, inlaid with hard woods of many kinds and colors; and finally this great and costly mansion is to be heated according to the latest and most approved methods.

That is usually all that is said and about all that is done in regard to supplying you and your family with the real necessity of life—the most important part of the whole edifice. I mean to say that the average architect pays little or no attention to the heating and ventilation of your building. He can tell you all about the ornaments and fancy fixings on the cupolas and cornices of your house, and will insist that they be mathematically correct, yet the heating and ventilation, on which depend your life and health, he leaves to some furnace peddler to complete “in the latest and most approved manner.”

Go with me now, if you please, for a few moments, while I take you from church to church, and school-house to school-house of our prosperous city, and examine into and study from a practical and scientific standpoint the legacy the architects have left this city in the way of heating and ventilation in a class of buildings that should be the pride of every city and above all other public buildings the very type of perfection.

On December 18, 1888, I visited and examined the St. Luke's Lutheran church, which is not yet completed, and which was planned by an eminent architect, Mr. Wm. Gibbon Presto, of Boston, Mass. I found the church was heated by two *Ætna* soft-coal furnaces, made at Springfield, O., which are supplied with cold air from two windows leading into the coal rooms in the basement, over which the air must pass before entering the heater. The lecture-room of the church is heated from these furnaces by hot air, which is conveyed in conduits coming in from 4 to 7 feet from the floor. At the rear end of the lecture room is a fire-place, and just beside it a foul-air register near the floor and opening into the furnace at that end of the church. At the front, or pulpit end of the lecture-room are foul-air ventilators located about 3 feet from the floor and opening into conduits that pass through pillars near the pulpit in the auditorium and open into the garret, which connects with the open tower. The one of these passes a part of the distance near the furnace, which aids some in warming its contents of foul air, and thus assists in its upward movement, while the other is not provided with any means of heating whatever. In the auditorium the

warm air comes in at the floor, while the foul air is allowed to escape by means of registers placed about 3 feet above the floor and opening into the attic, with no provisions for heating the column of cold air and thus favoring the exhaustion of the foul air from the main room.

REMARKS.—With no provisions for protecting the pure air from the dust of the coal and the ashes of the furnace it begins to get fouled before it enters even the hot-air chamber of the heater, and is an excellent method to carry quantities of dust into the rooms to be heated and ventilated. Whilst the lecture-room receives a pressure of warm air from the furnace the fire-place in the rear end of the church furnishes a most excellent method for the escape of the stratum of cold foul air that always finds a place at the floor, and it should always be kept burning when the room is being occupied. The foul-air ventilator that opens into the furnace should never be left open after the room is once heated, and under no circumstances when occupied by an audience, as that only serves to convey the *cold foul* air back to the furnace to be reheated and returned in all its impurity to be breathed over again by the audience. The other foul-air registers should have been placed at the floor, instead of 3 feet above the floor, and supplied with means for heating the column of cold air contained in them. As it is, they leave a three-foot stratum of cold foul air in the rooms they are intended to ventilate, even when the ventilators work. But you must remember they will not work until there is a sufficient pressure of air from within to lift the cold column of air they contain, and if that is at any time greater than the pressure within, they will allow their contents to descend into the room to the discomfort of the audience.

In the lecture-room, however, the fire-place when in use serves this purpose as far as it goes, and not unfrequently creates such a draft as to cause the cold air to descend in the foul-air ventilators to supply and equalize the vacuum thus induced, especially when the supply from the furnace does not equal the amount of air exhausted by the fire-place. It must be remembered that a grate with a fire in it, and foul-air flues without fire, will not work harmoniously in the same room at the same time; hence one or the other, as a rule, should be closed.

On December 26, 1888, I examined the Baptist church, which was built in 1864, but by whom it was planned I was unable to learn at this time. I found it was heated by a Ruby soft-coal furnace, which was supplied by fresh air from the outside by two 8x8 inch cold-air conduits, whilst the warm air was admitted into the auditorium by five registers placed in the floor near the rear end of the room, to which the warm air was conveyed by five 10-inch hot-air conduits. Two foul-air registers were placed in the floor near the front

end of the auditorium, one on either side, and connected with a conduit that returned the cold foul air to the furnace to be reheated and returned to the room again. These, however, had been abandoned some time since and closed up. Two 14x16 inch registers were placed, in the ceiling, which allows all the warm pure air to escape into the garret, while the cold foul air is allowed to remain in the lower portion of the room. The janitor, however, has discovered that in order to heat and keep the auditorium warm he must close these registers, which serve him well when the room gets too warm and he desires to cool it off rapidly.

REMARKS.—By enlarging the cold-air inlet of the furnace, and opening the foul-air ventilators at the floor into the two chimneys at the front end of the church, which are always kept warm by stoves, a very great improvement could be had at a minimum amount of expense in the way of heating and ventilating the auditorium. The lecture-room is heated by stoves, with no provision for either the ingress of pure air or egress of foul air, except by the windows, which needs no comment at this day and age, as a means of ventilation, as they are always an objectionable means of obtaining fresh air, except in very warm weather.

On January 10th and 11th, 1889, I inspected the Congregational church, which was built during 1871-3, at a cost of nearly \$125,000, under the direction of architect G. P. Randall, of Chicago, Ill. The auditorium is heated by steam from coils of pipe running under each seat, which furnish ample means for the desired amount of heat. The original plan provided for seven large ventilators placed in the comb of the roof and leading down into the top of the auditorium, and so arranged by valves as to be opened or closed at will, whilst the foul air was expected to beat a hasty retreat through two small registers, 12x12 inches, placed in the base-board of the auditorium and opening into the cellar.

By this theoretical plan it was intended to let the fresh air in at the comb, which being cold and consequently heavier, would descend into the auditorium, driving the foul air out at the floor into the cellar. But, like the old spook story of our childhood, when a certain boy undertook to scare another lad while he was passing through a certain piece of timber land, it was a failure. Having secured a sheet he placed it over his head and lay in wait for his victim. But a pet monkey decided to imitate the performance, and, unseen, followed his master to his hiding place, with a pillow-case over his head. Just as the victim approached, the trickster chanced to spy spook No. 2, and instead of scaring his victim, became frightened himself, and started to run with all his might, followed by the monkey, while the victim enjoyed the fun and egged on the race by shout-

ing, "Run, big spook, or little spook will catch you."

So in this method of ventilation, instead of the fresh air coming in at the comb and supplying the auditorium, the warm air rushed out, and instead of the foul air passing out through the little registers at the base-board, the cellar air rushed in, and we had a reverse order of affairs throughout, as in the old spook story. These are only the result of natural laws, however. The warm air being lighter rises and escapes through the comb ventilators, there being no provision made by the architect for a supply of fresh air a vacuum is the result, and the equilibrium is established by the cold air rushing in from the cellar through the foul-air registers, as well as through the doors and windows. The janitor, however, found it impossible to heat this room with the comb ventilators open, and in order to accomplish his duties satisfactorily, closed them and supplied the auditorium with fresh air by means of doors and windows.

The lecture-room of this same church is heated by stoves, and has no supply of fresh air, except through the doors and windows, whilst the warm air is allowed to escape, as usual, at ventilators placed near the ceiling, and the foul cold air is allowed to remain at the floor for the benefit and edification of the audience.

REMARKS.—It is no doubt plain to every one here to-night that the heating and ventilation of this church is a practical failure. It is true you heat the church, and, as managed by the janitor, you get some fresh air from promiscuous sources, and allow a part of the foul air to escape, none of which can be credited to the original plan, which in and of itself cannot be recommended as a desirable method of heating and ventilating.

On January 15th, 1889, the First Presbyterian church was inspected; it was built in 1858, but by whom I am unable to inform you. This church is heated by two Montrose hard-coal furnaces, which are supplied with a small quantity of fresh air from the outside, but the mechanism of the furnace is such that the air is frequently contaminated with gas and dust, and always so overheated as to make it very disagreeable to inhale. The provisions for ventilating the auditorium are a few small ventilators, placed near the ceiling, which permit a quantity of the warm air to escape and leaves the carbonic acid near the floor to soothe the innocent audience to sleep while they may be trying to listen to the most interesting sermon. Hence the objectionable method of window ventilation must be resorted to as the less of two evils, to relieve the so-called "closeness of the air" and stupor of the audience from the poisonous effects of large quantities of carbon dioxide. The lecture-room is heated by direct radiation from the same heaters, and has no system of ventilation, except the windows and doors.

REMARKS.—In this case it is plain that the church is improperly heated and is devoid of anything like adequate ventilation, whilst large quantities of coal are wasted annually in trying to make the church approximately comfortable.

The St. John's German Evangelical church was visited and inspected January 18, 1888. This edifice was built in 1870, and is heated by a Barnes' soft-coal heater, No. 64, which secures its supply of air from the Sunday-school room, which it heats by radiation, and this air, after being vitiated by the Sunday-school scholars, is heated and conveyed to the auditorium in a second-hand condition for the congregation to use during the sermon. No provisions are made for ventilation except by windows in either the auditorium or Sunday-school room.

On the same date I visited the St. Peter's Catholic church, a handsome edifice, built in 1870; this is heated by stoves, and has no provisions for ventilation except the doors and windows.

REMARKS.—The congregation is a large one, and the architectural finish of the interior of the church is very costly as well as attractive, but the supply of pure air for the hundreds who congregate there from day to day has been wholly left out of consideration except by the faulty method of window ventilation.

On the 21st of January, 1889, I visited the Episcopalian church, which was built in 1847, and has had some repairs since that time. It is heated by one Crystal furnace, manufactured at Troy, N. Y., and one Sayer furnace, made at Montrose, Pa. The former takes its cold air from the cellar, which is in quite a dilapidated condition, and is in turn supplied by a hole in the wall on the west side of the church. The Sayer furnace is supplied with cold *foul* air from the rear of the auditorium, whilst the pure air from outside is carefully avoided, except so much as may steal into the foul air register from the outside door of the church. There are no other provisions for ventilation except the doors and windows. The Sunday-school room, built two or three years ago, is heated by stoves, and ventilated by the door and window system.

REMARKS.—In the one furnace the impurities of an old and musty cellar are conveyed with the air to the furnace, heated, and forwarded to the auditorium, while the other furnace is employed to reheat the foul cold air of the church and return it to the unsuspecting audience to be breathed over and over again during each service.

The same day I inspected the United Presbyterian church, which was built in 1885, and planned by Richard Vaux, of New York City.

It is a handsome, well-arranged edifice, heated by two hard-coal "Richmond Triumph" furnaces, Nos. 30 and 27, built at Norwich, Conn. More care than usual has been observed with these furnaces, to exclude all the pure outside air possi-

ble, and instead the one is supplied with cold foul air exclusively, taken from the auditorium, reheated, and returned to the audience, while the other is supplied with air from the hall leading off the main hall to the lecture and Sunday-school rooms. Owing to the necessity of having the front door open as the people come and go, a small supply of outside air finds its way to this furnace at the opening and closing of each service.

REMARKS.—By means of openings in the ceiling and the opening of windows at the top, they are enabled to retain a large quantity of the cold foul air near the floor, and allow a great and unnecessary waste of the warm pure air through these openings. If the church authorities would close all the top openings of their rooms, keep them closed except when they desire to cool their church, supply the furnaces with fresh pure air from the outside, empty their foul cold-air into the ventilating flue instead of heating and returning it to be breathed over again, they would find a reduction in their coal bills, and a large decrease in the drowsiness of their congregation when confined for any length of time in the auditorium.

On January 21, 1889, I examined into the heating and ventilation of the Methodist Episcopal church, which was built by Mr. Hershisser, of this city, about 1868. It is heated by two hard-coal furnaces. One is a No. 5 Sayer furnace, built at Montrose, Pa., and the other is without name, so far as I could see, but is much like the Sayer heater. The former is placed in the library, and when the library window is open, it is supplied with fresh air from the exterior of the building; but when the window is closed, it is without a fresh-air supply, and must draw its air from the library and lecture room with which to supply the auditorium. The other furnace is supplied with fresh air by a conduit about a foot square, which receives its supply from the outside by means of a window. There is no provision whatever for the escape of foul air from the auditorium except through the doors and windows. Two small registers have been placed at either side of the auditorium on about a level with the tops of the windows, which allow quite a quantity of the *warm pure-air* to escape, and thus aid in cooling the room and wasting the fuel. The lecture room must depend entirely on door and window ventilation for the purification of the air.

REMARKS.—By changing the registers and placing them at the floor, making them several times larger, and supplying both furnaces all the time with fresh air from the outside of the church, the auditorium could be very greatly improved with regard to its heating and ventilation.

The Christian church was examined on January 22, 1889. The erection of this church dates back to a period before the civil war; the exact date I was unable to obtain. It is heated by a

Sayer furnace No. 5, supplied from the floor of the auditorium with *cold foul-air*, which is allowed to escape through a register in the floor at the west side of the church; this connects with a cold air conduit coming from the exterior of the edifice to the furnace. No other provisions have been made for the escape of the foul cold-air except the doors and windows.

REMARKS.—In this church we have a mixing of "good and evil," as it were. So far as supplying the furnace with air from the outside is concerned it is good, but when it comes to contaminating the same with vitiated air from the auditorium, it is evil. The vitiated air should be conveyed to a ventilating flue and allowed to escape.

On January 22, 1889, I visited the Evangelical Lutheran church, which has been recently repaired. This structure is heated by two "John Grossius" soft-coal heaters, made in Cincinnati. The Sunday-school room is heated by radiation, and ventilated by doors and windows only. The auditorium is heated by fresh warm air, which enters the room by means of registers in the floor. There is no provision for the escape of foul air except by the doors and windows. An opening in the garret is in the interest of the coal dealers, as it necessitates the use of more coal to heat the church, owing to the great loss of warm air, whilst the corresponding increase of carbonic acid keeps up a slow process of poisoning the audience.

On the same day I visited the English Lutheran church, which is an old-style edifice, built in 1856, and soon to be replaced with a new one.

This building is heated with a Sunbeam Challenge furnace, from New York. The furnace is placed in the lecture room, which is heated by radiation, and ventilated by doors and windows, while the auditorium is supplied with foul air taken from the lecture room, and heated and sent upstairs. There is no provision for the escape of the foul air except through the windows and doors of the auditorium, which is supplied with a sort of a safety-valve attachment in the way of a trap door in the ceiling, which is very convenient to waste the surplus heat of the room when the pressure gets too high.

On January 22, 1889, I visited the church of the Believers in Christ, which was planned by the pastor, Rev. Sorg, and built in 1887. This plain but neat little edifice is heated by a Montrose furnace and supplied with fresh air from the exterior of the building by means of a 15-inch vitrified pipe conduit. The foul air is removed from the lecture and Sunday-school rooms and auditorium by means of four foul-air registers placed at the floor and opening into the ventilating shafts. The auditorium is also supplied with four additional registers, placed near the ceiling, which are only used to cool the church when it gets overheated.

REMARKS.—I cannot pass this building with-

out congratulating this congregation on the advancement they have attained over all the other churches in the city, with perhaps one exception, in regard to the heating and ventilation of their building.

On January 24, 1889, I examined the Associate Presbyterian church, which is a very small edifice, built in 1888; it is heated by stoves, and ventilated by doors and windows. Four 12 × 12 inch registers have been placed in the walls near the ceiling, and are only mentioned to be condemned, except for cooling off the church when it is overheated.

On the same day I inspected the Reform Presbyterian church, which was planned by a Mr. Rumbaugh, then of this city, and built in 1885. This church is heated by Goff & Co.'s hard coal, hot-air, blast furnace, which takes the fresh air from outside the church, heats it, and delivers it to the auditorium at the floor near the rear of the room, while the foul cold-air is taken from the front and lowest part of the room, and exhausted by means of a foul-air shaft, which is heated by a small stove used in one of the side rooms of the church. In the foul air conduit is an arrangement by which the cold air can be turned into the fresh-air conduit leading to the furnace. This is used only while heating the church, when it is cut off from the furnace and again opened into the foul-air shaft, which is or should be kept open during the presence of an audience in the auditorium. The Sunday-school and lecture room is heated by a Grossius heater, manufactured in Cincinnati, and is supplied with fresh air from the exterior. Unfortunately, however, there was no provision in this room for the escape of the foul air, except by the doors and windows.

REMARKS.—With the exception of the Sunday-school room, the system for heating and ventilation used in this church is the best in the city, whilst the Sunday-school room could easily be remedied by placing a foul-air register in the ventilating shaft of the chimney.

It will be observed that, with two exceptions, there is not a church in our city that is provided with adequate means for the prompt removal of the carbon dioxide, the deadly poison that is exhaled with every breath. When we remember that it requires at least 1,500 cubic feet of pure air every hour to supply one human being, and when we know that the average movement of air through a conduit of 1 square foot capacity under ordinary circumstances, in mild weather, is about 150 feet a minute, and again take into consideration the miserly holes that are required to do this duty in supplying the majority of our churches, we are not surprised that people get sleepy when they attend church. It would be just as reasonable for each congregation to elect a committee annually, whose duty should be to give each mem-

ber a dose of morphine every time they enter the church, in order to stupefy them during the sermon, as to allow the ventilation of their churches to remain as they are, and poison their members with a drug that is even more dangerous than any of the modern narcotics, to say nothing of the disgusting and filthy custom of breathing and rebreathing the foul exhalations of their neighbors.

I have no doubt this lecture has already reached proportions that may weary some of you at least, but the importance of the subject is such as justifies me in trespassing still further on your patience, and hence I have left the most important part of our topic for the last.

When we remember that the youth of our city spend the best part of their days (from 7 years to 21 years) in our school-houses, and that among them is your daughter or my son, whose life and health depend on the perfection of their sanitary conditions and surroundings, it is sufficient excuse for our dwelling longer on this subject, and examining into their real condition and merits from a strictly sanitary standpoint. I shall try, however, to group them, and thus save time and space.

The first two school-houses examined were the Marion Avenue and John's Addition (new building). Both of these buildings have just recently been constructed, and were planned and built by Mr. F. D. Webber, of this city. As they are practically heated and ventilated on the same plan, I will consider them together in order to save time.

Each room is heated by a Grossius soft-coal heater, placed in the room to be heated, and supplied with cold fresh-air from the exterior of the building, conveyed to the heater by a tin conduit some 8 or 10 inches in diameter, with a perforated diaphragm placed near the exterior opening to lessen the amount of air admitted. This air passes through the hot-air chamber, and out at the top of the stove into the room. A number of foul-air ventilators are placed in the base-board at the floor, which the contractor informed me opened into the space beneath the floor, and from there into the foul-air shaft. These registers at the floor are 15 × 5 inches with one exception, which was 12 × 10 inches, and placed in the baseboard near the floor, and opened directly into the ventilating flue, which was warmed by the chimney.

REMARKS.—In the first place, the fresh-air supply was entirely too small for the number of pupils contained in each room, to give them the required amount of air, and the result was I found the teachers were in the habit of raising the windows to admit fresh air, at the expense of some unfortunate child taking cold from a draft, or being uncomfortable to say the least.

In the second place, I found that almost invariably the cold air was coming *in* at these foul air registers, placed around the room at the floor, instead of going *out*, except the ones opening into

the ventilating flue direct, in which there was a strong outward draft. This fact necessitated the keeping of these closed, as they made the room very uncomfortable when left open. I think we can attribute the failure of these ventilators to work as designed to three possible causes:

First, that their size is too small, and the space between the floor and the ceiling is not sufficient to favor an outward draft.

Second, that the ventilating flue into which they emptied was too small, or not sufficiently heated to establish a draft under the circumstances, and

Third, that the supply of fresh air was not sufficient to supply the exhaust through the direct ventilator and the open transoms above the doors, and at the same time produce a draft through under the floor.

Whilst these two buildings are the best ventilated school-buildings in the city, yet I would recommend more fresh air, which should not be heated so hot while passing through the hot air chamber as it now is, and either no ventilators opening into the space beneath the floor, or if there are, to have them larger, with more space beneath the floor, with a well heated foul air shaft in order to secure a constant and perfect exhaustion of the cold foul air. As the buildings now exist, I would close all these floor ventilators except the one opening into the ventilating shaft direct, and make that one opening into the foul air flue at least two or three times larger. Whilst this would not secure perfection in heating and ventilation, it would be a vast improvement on the present, and avoid the dangerous and unsanitary habit of opening the doors and windows to obtain fresh air.

On the same date (January 22, 1889) I visited and examined the High School building, and on the 23d the Fourth Ward building, which we will consider together, as they are both heated and ventilated on the same plan. These buildings were erected some fifteen years ago by Mr. Hershiser, of this city, who put in a Boston system of ventilation. The rooms were all heated by a Grossius heater, supplied with fresh air from the exterior, while the foul air was *intended* to be removed by small registers, 18 × 4 inches, placed in the baseboard at the floor, and opened into a 3-inch or 4-inch tin conduit that descended into a 6-inch tin conduit placed beneath the floor, and which finally opened into the ventilating shaft.

REMARKS.—The same remarks hold good in regard to these buildings as to the former as regards their fresh-air supply, and the system of getting rid of the foul air is a total failure. Excepting the little ventilators that open directly into the ventilating shafts that were warmed by the chimney, there was no outward draft whatever, whilst in many of them that opened into a cold ventilating shaft there was a strong current of cold air coming in, which kept the floor cold

and uncomfortable. The same recommendations would apply to these buildings as to the former ones, which we are certain could still be improved by having furnaces placed in the cellar to supply the necessary amount of fresh air properly warmed, and thus avoid the necessity of carrying the coal up stairs and delivering it all over those large buildings as is now the case, saying nothing of the increased danger of fire by so many stoves.

On January 22, 1889, I examined the old school building in John's Addition, and on the 23d the old Normal School building, which we speak of only to condemn. They are both heated by stoves, with no provisions for fresh air, or the escape of the foul air, except at the doors and windows. In these buildings the air was almost intolerable, and the sooner they are condemned for school purposes the better it will be for the rising generation that must now be incarcerated in them from day to day.

The Second and Third Ward buildings were examined on January 23, 1889. Both were heated by the Grossius heater, which was supplied with fresh air from the exterior the same as the other buildings already described. In the old part of the Third Ward building the foul-air ventilators were placed at the floor as in the former buildings, but opened into the hollow wall, instead of a ventilating flue, which connected them with the garret. Some of these ventilators were working all right, but the majority were admitting *cold* air, instead of exhausting the foul air. In this building there were no ventilators opening directly into foul air shafts. In the new part of this building there were no foul-air ventilators at the floor, but a retrograde metamorphosis had apparently been established by placing three ventilators in the wall near the top of the room, whereby the foul air was left in the room, and a large portion of the warm pure air wasted.

In the Second Ward school building the new part has a foul-air register up stairs, 18 x 12 inches, opening into the hollow wall near the chimney, whilst the old part has no foul-air ventilators at all, and no registers, except some in the top of the room which, as usual, waste fuel by cooling the room and leaving the foul air in it. I found one 8 x 10 inch ventilator opening into the smoke flue at the floor up stairs in one of the rooms, while some of them were not provided with any kind of ventilation except the already so frequently condemned door-and-window ventilation.

On the same date we examined the last one of the city school buildings, located in Newman's Addition, which was built some ten years ago, and was heated by a Grossius heater, and supplied with fresh air from the exterior as usual. In this building there was an opening in the ventilator in the cellar, which very much interferes with its duties in the school-rooms, where it was most needed. In the lower room a foul-air register

opened into the ventilating flue at the floor, but was so filled with dirt as to completely stop all exit of air through it. In the same room were a few small registers placed back of the teacher's stand, and located about halfway between the floor and ceiling, thus allowing the warm air of their room, with as much of the foul air as chanced to rise that high in the room, to escape, whilst from these to the floor was a 5 or 6 foot stratum of foul air which had no means of escape, and which was additionally cooled by reverse drafts of cold air which invaded the room very frequently through these upper ventilators. The up-stairs department was heated and ventilated on practically the same plan, which resulted in the teachers having to depend on window-and-door ventilation for their pupils.

In all these inspections, in which I was assisted by our worthy Superintendent of Instruction, Prof. Simpson, while examining the school buildings, you will observe I have examined fifteen churches and nine school-houses, every one of which I visited in person, from the cellar to the garret, and examined carefully their systems of heating and ventilation, and when necessary actually tested the drafts and currents of air by proper methods, to satisfy myself of their exact course; and whilst a few of them are fair, I have failed to find a single one complete, and the majority of them are simply horrible!

The question now most naturally arises after all these examinations, How shall we completely heat and ventilate our public buildings? In answer to this question, I will say there are three prime factors that must be duly considered. They are:

1. Uniform heating throughout each room.
2. Abundance of pure air for every person.
3. Prompt removal of foul air from each room.

Then, after having secured these, there are four other factors that must not be neglected. They are:

1. Safety.
2. Economy.
3. Durability.
4. Simplicity.

Having taken it for granted that we have secured *all* these, we will now proceed to answer the question of "How shall we completely heat and ventilate our public buildings?"

By a series of colored charts, and after having shown you the faults of your public buildings, I will continue to illustrate the complete plan, which involves the correct scientific principle of heating and ventilation, by the aid of these charts. Having done that, I will endeavor to confirm my statements by a practical demonstration of both the true and false principles of heating and ventilation by a model house. Before we take up the charts, permit me to say that in a properly heated room there should not exist in

any part of the same room a difference of over 5° to 10° , including the ceiling and the floor.

Provisions should be made to admit at least 1,500 cubic feet of air every hour for each occupant of a given room, which can easily be calculated when we know that on an ordinary calm day about 150 feet of air passes through a conduit one foot square in a minute, or in other words, 9,000 cubic feet, or just enough for six persons for a single hour. In addition to supplying the pure warm air to a room, there should be ample means for the prompt removal of all the foul cold-air, and under no consideration should the carbonic acid be allowed to exceed (and continue at that point) 10 parts in 10,000 of air, and much better if it is prevented from exceeding 5 parts in 10,000, especially in our school rooms. But the real facts are that it is seldom kept so low as 10, and often reaches 20 parts, and even more, to 10,000 parts of air.

If you will turn your attention to these charts, which have been carefully prepared from practical results of a long series of chemical and thermometrical investigations, and show the average relative purity of the air, as well as the temperature of the same, under the various systems of heating and ventilation they represent, you will, perhaps, more fully understand what I desire to make plain to every one here to-night.

In chart No. 1, you will readily recognize a familiar every day picture of the mother at her ironing, with a red-hot stove near by, and a window near the stove, let down from the top, through which is escaping a volume of hot air at the upper part of the opening, while a stratum of cold air is pouring in at the lower part of the opening to supply the vacuum produced by the escape of the former. From the lowered window of the leeward side of the room is a constant volume of cold air rapidly descending to the floor, and at the same time keeping that side of the entire room cold by forcing the warm air to the opposite side of the room. The mother's face is flushed with the heat from the stove and the exercise of the ironing, for which reason she has just opened the window to get a breath of fresh air, as she terms it. While the upper portion of her body is too warm, her feet are cold, and at the same time her little child is crying with the cold as it tries to play on the floor around her feet; and yet that mother goes to bed with a cough, and her child suffers with catarrhal trouble, and she "can't for the life of her see how it comes."

Only last Saturday I was visiting a child with congestion of the lungs, and lying in a cradle near the floor. I remarked that the room was not warm enough for it, when they promptly pointed me to the thermometer that was hanging about six feet from the floor and registered 72° Fah. I laid the same instrument on the floor be-

side the cradle for ten minutes, and showed them it registered 56° , or a difference of only 16° , and yet they were surprised that their child had been taken sick, for they were sure it had never been out of the house or exposed in any way to the cold.

Chart No. 2, represents the good old-fashioned grate "of ye olden times," when a man never lacked for exercise while trying to keep warm by it, for just as fast as he got one foot warm by crossing his legs and holding his foot up to the fire, his other foot would get cold, and he would have to change off and warm that, and at the same time while his face was flushed with the heat, the cold chills were playing up and down his back until he must turn that to the fire, when the other side would get cold; and thus he must ever turn like the spit before the fire to keep warm. You will readily see by this chart that it divides the room into two triangles; as the rays of heat travel in direct lines and the heated air rises, the natural consequences are that the side of the room next to the grate is warm from the level of the fire to the ceiling, while the opposite side is cold almost from the ceiling to the floor. You will see that each one of these form the perpendicular of a triangle; while we have a cold floor on the one hand, and a warm ceiling on the other, forming the bases, and a direct line from the fire to the opposite upper corner of the room forms the hypothenuse that divides, as it were, the cold foul-air of one-half of the room from the warm air of the other. It is no longer a question that the fire-place alone is a very defective method of trying to heat and ventilate a room.

We will now pass on to chart No. 3, which represents an attempt at heating a room without stove or grate. In this case the architect has decided to heat the room with warm air admitted at the floor in the centre of the room, and in full accord with the old theory that the foul air *rises*, he has decided to permit that to escape at the top of the room, just as I have found to be the case in several of our school rooms and churches in this city. Indeed, I am sure you would be surprised to find how many intelligent people, even at this day, will appear to be thunder-struck when you tell them the warm pure air is at the top of the room, and the foul cold air at the bottom of the same. Only a few days ago I met a gentlemen who still contended that such was the case, and insisted on not being reconciled to believe anything else. I asked him if he had ever made or saw made any chemical analysis of the air of various rooms? He said, "No." I then asked him how he knew that he was correct? He replied, "Why, because the physiology says so." That is the secret of the whole business. Some person said so, and hence, it must be so, whether it is so or not, and the general result is that no person takes the pains to investigate the

facts and correct the popular mistake, and consequently custom has to some people made a law.

You will see by this chart that like the smoke from the fire in the Indian's tent, the heat arises to the top of the room and out of the first opening it finds, and if the exit is equal to the inlet, the remainder of the room continues cold, and the foul air it contains remains unmolested. In trying to overcome this the architect has decided to change the plan of ingress of the warm air to the opposite lower side of the room from the place of exit at the ceiling, with a view of making the warm air travel a greater distance through the room, but the improvement, as you will see by chart No. 4, is so slight, and the results so unsatisfactory, that he must seek some other method in order to accomplish his ends, and warm the room and remove the foul air.

In chart No. 5, you will observe he has, in part, accomplished this by lowering the place of exit, and just in proportion as that is lowered, the portion of the room above is heated and ventilated, while that portion below is imperfectly heated and contains a stratum of foul air. You will remember I called attention to this fact in my report of the condition of the St. Luke's church, of this city, which has its foul-air registers placed some three feet from the floor, and in consequence will leave an equivalent stratum of foul air in the room. You might just as well set a barrel on end and try to empty it by boring a hole, say a foot from the bottom. Of course, the water would all run out to a level with the bottom of the hole, which would leave a foot of water remaining in the barrel. The same is just as true of cold foul-air in a room.

In chart No. 6 the sanitary engineer has solved the problem and placed the inlet and outlet of the air both at the floor. The warm pure air is taken in at the floor and the foul air is removed at the floor at the opposite side of the room, and the consequence is that the entire room is heated and ventilated evenly throughout. That this method of heating and ventilating a room is a success is beyond question, and if there is a single person in this audience here to-night who questions its practicability, all I will ask him to do is to come to my house and I will show him the whole system at work in my own house, where it has proved successful beyond a question, and, besides, has very greatly diminished my coal bills, over the old plan of top-ventilation, which preceded it in the same house, besides supplying each inmate with over 1,500 cubic feet of warm pure air every hour, and removing the foul air to a standard not exceeding 4 or 5 parts in 10,000 at any time, day or night. Perfect as this plan is, it has still been improved upon, not in the way of ventilation, but in the economy of fuel and the comfort of the floors, by running the cold foul air through registers placed just beneath the windows and opening into

the space beneath the floors, and from there into the foul-air ventilator, which warms and dries the floors, and thus is a saving on the fuel by causing this partially warmed air to pass through under the floor before it escapes up the ventilating shaft.

This ingenious and economical method of heating and ventilating was suggested and put into practice by that veteran sanitary engineer, of Toledo, Ohio, Mr. Isaac D. Smead, who has done more to develop and perfect the true scientific principles of heating and ventilating buildings than any one man on this side of the Atlantic Ocean, if not in the world.

As the old saying is, "Seeing is believing," hence before closing this lecture I will show you, by the aid of this model house, beyond a question that the principles I have endeavored to impress upon you are correct and based on scientific facts. You will observe that this is nothing but a tin box, made air tight, in the shape of a house, with a glass front in it. Here at this end is an opening at the floor to admit fresh air. At the opposite end is an opening at the floor leading into a chimney or ventilating flue, just as a fire-place or grate would. At the top of the room are six openings to represent windows. Now I will take this small wax candle, and from an opening in the floor I will place it in the lower part of the room near the floor and close the opening. I will now close all the windows and just leave the opening at the floor for pure air and the other opening at the floor for the escape or foul air, open, and you will observe the candle burns brilliantly and uninterruptedly, or until it is consumed.

I will now close the exit for foul air at the floor and open all the six windows at the top, and you will find that the candle will burn for a while, but the carbonic acid (which is formed by the burning candle in the same manner as it is by a breathing person) being heavier cannot rise against gravity and escape at the windows, and hence settles down at the floor, and just as soon as it fills the room to the height of the blaze in the candle, the light begins to turn blue, flickers, and finally dies from carbonic acid poisoning.

Again, if I close the opening for the admission of pure air at the floor, and also the opening for the exit of foul air at the floor, and open the six windows, all at the top of the room, the candle goes out much sooner than in the previous experiment; for in this experiment the supply of fresh air is diminished as well as the escape of the carbonic acid prohibited, and here you see the folly and unscientific principle of opening the windows at the top to ventilate a room.

Now, if I close the windows at the top, and also the opening for the foul air at the floor, and only open the ventilator for the admission of pure air, the candle is again extinguished by the foul air which accumulates on the floor of the room,

as there is no circulation of air in this case, and the poisonous gas cannot escape. Or, if I reverse this experiment, close the opening for the admission of pure air, and open the foul-air ventilator at the floor, the candle again dies from carbon dioxide, which for want of circulation cannot escape, and the result is fatal to the candle.

It seems to me that these experiments which have been strengthened time and again by chemical analysis, are sufficient to demonstrate to any unbiased mind the fallacy of so-called top ventilation, as compared with floor ventilation. I am sure if the principles here demonstrated by this simple model were put into practice in our city schools and churches there would be fewer of our school children coming home in the evening with headache and general languor, and fewer drowsy persons in our churches during divine service than we see now, which can usually be attributed to defective ventilation and the result of a slow process of poisoning from carbonic acid, saying nothing of its effects on weak lungs and its general depression on the whole economy. For let us remember before we close, what we said at the beginning of this lecture—that pure air is one of the three essential compounds for the support of human life.

Mansfield, Ohio, Feb. 11, 1889.

THE ETIOLOGY OF DIPHTHERIA.

Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, Feb. 13, 1889.

BY SAMUEL N. NELSON, A.M., M.D.,
OF BOSTON, MASS.

Concerning the origin of diphtheria much discussion has arisen. Although its infective character has been doubted by some, it is now quite universally accepted; and I shall confine my remarks to a brief review and discussion of the etiology of the disease from the standpoint of the biologist.

I shall adhere to the classification of microorganisms that is now universally adopted, viz., using the term "bacteria" in a generic sense, including both the

Micrococci, the ball forms and the

Bacilli, the rod forms.

That bacteria were early found in diphtheritic membrane, even before the recent improvement and perfection of the microscope permitted the researches and investigations resulting in the discovery of many pathogenic microorganisms, is not to be wondered at, when we realize that the healthy human mouth is constantly infested with bacteria of various kinds; not less than thirty different varieties having been isolated and cultivated by my friend Prof. W. D. Miller, whose labors have won for him the distinction of being the only American who has been honored with a professorship in the University of Berlin. We

must remember, however, that it is one thing to prove the existence of microorganisms in a diphtheritic false membrane, and another thing to prove that these germs are the *cause of the disease*. The difficulties are very great, and in the case of diphtheria as perhaps in no other disease, do we realize the importance of the isolation of the bacteria and their cultivation in a pure state, together with the reproduction of the disease by inoculation of the cultivated germs; before an attempt can be made to judge whether they are present as the cause of the disease, or are there, as most of them undoubtedly are, only as a result of the diseased state affording favorable conditions and soil for their growth and development.

The first reference to the idea that diphtheria is of parasitic origin, that I have found, is an article by Prof. Lacock,¹ and the idea was afterwards revived by Jodin.²

Ortel³ says concerning bacteria in diphtheria: "They were discovered as far back as 1868, by Buhl, Hueter, and myself (I called them at that time micrococcus) in false membranes, the blood, and the tissues; in like manner they were demonstrated by von Recklinghausen, Nassiloff, Waldeyer, Klebs, Eberth, Heiberg and others in the most different organs and tissues. In secondary infection of wounds, tracheotomy incisions, and ulcers, the grayish skin-like false membranes, as well as the tissues themselves, are crowded with these organisms."

In a "Treatise on Diphtheria," 1880, Dr. A. Jacobi reminds us that "Buhl was the first to discover schizomycetæ in diphtheritic membrane, but expressed no opinion as to the part they played in the process." Hüter found them in the gray diphtheritic covering of wounds, in the surrounding apparently healthy tissues, and in the blood. Hüter and Tomasi found them in the diphtheritic membranes of the pharynx and larynx, inoculated them on the mucous membranes of animals, and described them as small, round or oval, dark-colored, active little bodies. The latter observers look upon these organisms as a part of the infectious element. Oertel found them in diphtheritic membrane and in inflamed mucous membranes, in the lymphatic vessels, lymphatic glands, kidneys and other organs; he considers them at the bottom of the diphtheritic process and constituting the contagious element.

Nassiloff, too, after inoculation in the cornea, noticed an enormous multiplication of the microscopic organisms, and their appearance with pus-cells in the lacteals, and in the lymphatics of the palate, and even in the bones and cartilages. He asserts that the development of organisms is the primary step in the diphtheritic process.

¹ Medical Times and Gazette, May 29, 1858.

² "De la nature et du traitement du croup, etc.," Revue Méd., t. i. pp. 22 and 134, Paris, 1859.

³ Cyclopædia of the Practice of Medicine, Ziemssen, American Edition, vol. i, page 588.

Eberth made successful inoculations in living tissues: the microorganisms, introduced into the cornea, proliferated actively and caused an inflammation of irritative character, in the surrounding tissue. He asserts⁴ that diphtheria cannot occur without bacteria. Klebs inoculated the micrococci in pigeons and dogs and demonstrated the presence thereof in the blood of the animals after death. Orth found them in the pleura, lungs, kidneys, and urinary bladder.⁵

Giacchi⁶ believes that a parasite is as necessary in the pathogenesis of diphtheria as the *Oidium vitis* is in the production of the disease of the grape.

Letzerich⁷ also differs from other German observers in regarding a true fungus, *Zygodermus fuscus* as the specific contagion of diphtheria.

The *Micrococcus diphtherie* Oertel⁸ is thus described: "It has an oval form with a length of 1 to 1.5 μ , and a breadth of 0.3 μ ; larger individuals, found nearer the surface, being 4.2 μ long, and 1.1 μ broad. Where the individuals are more scattered, they occur mostly in pairs, rarely a number connected into a torula-like chain. When present in masses, the cells lie so close together that it is difficult to determine whether they are connected or not. They are then imbedded in a gelatinous envelop, and thus combined in masses into a colony."

Talamon⁹ does not recognize the *Zygodermus fuscus* of Letzerich nor the *Mycrosporon* of Klebs, as the cause of diphtheria, which he believes to be a mycelium with characteristic growths from 2 to 4 or 5 μ size, and having two kinds of spores:

a. Round or oval spores, which are the spores of germination, which occur in zooglea, and

b. Rectangular spores, which represent the third term of development of the fungus. These he has cultivated and inoculated on the mucous membrane of the mouth and nose of six rabbits, two guinea pigs, four frogs, one cock, and four pigeons, with reproduction of the membrane and death of some of the animals.

Klebs⁹ mentions that at first he supposed there was only one form of microorganism present in diphtheria. This he called the *Microsporon diphtheriticum*, and he claimed that it produced both rods and cocci, as different forms in the development of the same organism. Afterwards, however, he says he recognized another form of diphtheria, which was characterised by the presence of bacilli. The latter form he found at Zurich. It corresponded with the first form only in the gross anatomical changes. The latter

form is characterized by the tendency to an extremely rapid extension of the membrane into the trachea, even while the affection in the pharynx is still in active process. Death usually occurs from suffocation.

Morphologically Klebs says that the bacilli are long and narrow, and that they hardly attain the size of the bacillus tuberculosis. Two spores are always found in each rod. When the diphtheritic membrane is dried gradually over sulphuric acid at the ordinary temperature, the spores increase very rapidly, and then rods may be found which contain no spores, while others contain four spores. He is convinced, he says, that a true diphtheria exists only when rod-shaped organisms are present in the membrane. This allows of two possibilities; in the microspore form we have micrococci, together with somewhat long rods which do not contain spores, and in these cases a general infection is rapidly developed. In the bacillus form, on the contrary, which is first dangerous on account of its rapid extension on the mucous membranes, we find a great number of small rods which contain from two to four spores.

We learn from the address of Dr. E. G. Barnes¹⁰ that Loeffler, whose investigations were extensive and are published by the New Sydenham Society, found, in the cases he examined, two organisms present in large numbers; the one were chain-forming micrococci or streptococci; the other the bacilli described by Klebs as characteristic of diphtheria. The streptococci may be exonerated from being the active cause of diphtheria by the fact that they are present in various other diseases which are accompanied by lesions of the mucous membrane; for example, small-pox, typhoid and puerperal fever, and therefore may be regarded as accidental; that they are found only in a limited number of cases of human diphtheria, and that, when inoculated on lower animals, they never produced a disease even resembling it. Much stronger evidence was shown by Loeffler in favor of Klebs' bacillus being the true cause, and he even produced a similar disease by inoculating them on lower animals; but, on the other hand, he found they were not present in a number of undoubted cases of diphtheria; that in the false membrane he produced by introducing them through a wound in the trachea in rabbits and fowls, he did not find them in the same typical arrangement as in man; that they produced no effect in several animals otherwise susceptible to their action when applied to the uninjured mucous membrane of the fauces, respiratory passages, eyes and vagina; that paralytic symptoms did not occur in the inoculated animals; and, lastly, that in one case he found a perfectly indistinguishable bacterium in the saliva of a healthy child.

⁴ Zur Kenntn. der bacterit. Mykosc., 1872.

⁵ "Natura e Therapia dell' angina difteria" Lo Sperimentale, November, 1882.

⁶ Virchow's Archiv. Bd. xlv. et seq.

⁷ Zur Ätiologie der Infektionskrankheiten, 1881; and Journal Roy. Mic. Soc., ser. II. vol. II. p. 88.

⁸ Progrès Méd., 1881, ix. pp. 122 and 49.

⁹ Verhandlungen des Congresses fuer innere Medicin, 1883, pp. 139 to 154.

¹⁰ British Medical Journal, July 28, 1888.

Many allusions are now being made in the secular press to the work recently done in Pasteur's laboratory, which has been described in the *Gazette Hebdomadaire de Med. et de Chir.*, January 18, 1889. MM. Roux and Yersin constantly found the bacillus of Klebs and Loeffler, which they describe to be a little thicker than the bacillus tuberculosis and of the same length. This description, you will observe, differs a little from the original description of Klebs quoted above. They have cultivated the bacillus, and their inoculation experiments have produced paralysis, without which they do not consider the proof of real diphtheria conclusive.

My own experiments in the cultivation and inoculation of the bacteria of diphtheria were made several years ago, and are reported in a paper read before the meeting of the Eighth International Medical Congress at Copenhagen in 1884."

In November, 1883, I assisted Dr. H. O. Marcy in performing the operation of tracheotomy upon a child 3 years old, who was suffering from a severe attack of diphtheria. He was *in extremis* at the time of the operation, the breathing being very short and difficult. Membrane covered both tonsils. The operation was successfully performed and a tube inserted, when the breathing became perfectly free. Previous to the introduction of the tube, a complete membranous cast of the trachea was removed through the opening. The subsequent history was unfavorable, for the child died of blood poisoning about thirty-six hours later.

Soon after the operation I inoculated one of my culture bulbs with a small piece of the membrane removed from the trachea. These bulbs are made after those of Sternberg, of the United States Army, which I then preferred to the method of culture on solid culture-media; I had not become thoroughly familiar with the latter method until some months later in Berlin, when I was soon convinced that it affords many advantages that cannot be obtained from cultures in bulbs. These bulbs are made from ordinary glass-tubing about three-tenths of an inch in diameter. In one end a bulb is blown, and the other extremity is drawn to a fine capillary point. These I made myself in quite large quantities at a time. They were filled two-thirds full with a sterilized beef-bouillon, then hermetically sealed, and in this condition they will keep indefinitely if successfully made.

For cultures I found it best to use bulbs which had stood the test of a temperature of 70° to 100° F. for several weeks; for if they remain clear and pellucid at the end of this time, any subsequent changes that might occur are due to the substances introduced.

Four days after the introduction of the diphtheritic membrane as seed, the liquid in the culture bulb kept at temperature of 70° became cloudy or turbid, and when examined with the microscope at 1,000 diameters, there were found immense quantities of a micrococcus, identical with those seen in the fresh membrane. This micrococcus has about the diameter of the micrococcus of pus, and is very slightly elongated. They were grouped in clusters of a few members each and belong to the group of staphylococci.

A second culture bulb was inoculated with a fraction of a drop of the liquid in the first, and three days later the same cloudy appearance was noticed, and examination showed identical micrococci. In this way the cultures were carried through ten generations, in each case several bulbs being inoculated at a time, and each one breeding true in three days. In all, about fifty bulbs were used.

My subsequent experiments of inoculation were carried on with the advice and assistance of Dr. Wm. F. Whitney. Four guinea pigs were inoculated in the cornea with the contents of one of the bulbs containing the culture of the sixth generation. One of these animals died thirty-six hours later of blood poisoning. The others became very ill, losing their appetite and the eyelids becoming much swollen and œdematous, with profuse discharge which contained the micrococci. The cornea became cloudy and was covered with a membrane. Two of these animals were killed on the third day after inoculation, this being the period at which the micrococci developed; one was allowed to get well, but the eyes were completely destroyed.

In the aqueous humor of the eyes dissected there were found micrococci, which were also found in sections of the cornea of the eyes, which had been placed in alcohol immediately after removal, and when hardened were cut with a microtome.

These experiments are limited in number and, I know, need further confirmation; but as far as they go they seem to show that there is a micrococcus of diphtheria which can be cultivated, and which when inoculated in the guinea pig produces diphtheria.

If, however, further proof is needed I can give it; for on the third day after killing the animals, and after no other exposure, I myself became ill, developing a severe attack of diphtheria, which appeared first in one tonsil and the uvula, and then on the other tonsil, being accompanied with severe constitutional symptoms and followed by a slow and tedious recovery. This has proved, to my satisfaction, at least, the correctness of these views.

Thus we see in brief review the chain of the sequence of events:

A typical case of diphtheria in a child;

"Compte-rendu de Congrès Périodique International des Sciences Médicales, 8me session, Copenhagen, 1884, t. i. Section de Pathologie Générale et d'Anatomie Pathologique, p. 114.

The presence of micrococci in the membrane;
The cultivation of the micrococci in pure cultures to the tenth generation;

The inoculation of guinea pigs with micrococci of the sixth cultivated generation, and reproduction of the disease;

The unwitting inoculation of the experimenter, thus bringing the disease back to its original form in a human being.

PHTHISIS PNEUMONICA ET LARYNGITIS CHRONICA.

Read before the Medical Society of the District of Columbia, December 12, 1888.

BY A. A. HOEHLING,

MEDICAL INSPECTOR, U. S. NAVY.

C. H., Corporal U. S. Marine Corps, native of Wilmington, Del., age, 41 yrs. 8 mos., enlisted at Annapolis, Md., August 14, 1887. Admitted from U. S. Naval Academy, Annapolis, Md., at 2:30 P.M., September 19, 1888. Died November 21, 1888.

"The patient has had sixteen years' service in the U. S. Marine Corps. Dates the beginning of his ill-health in September, 1887, when he 'caught cold' sleeping on deck on board the U. S. S. 'Dolphin' on a passage from Annapolis to Philadelphia. He has been from time to time under treatment at this station, but has continued on duty until two days ago. He has in the last twelve months had fever from time to time, night sweats, cough and progressive emaciation, with loss of appetite. He has percussion dullness at tops of both lungs, irregular expiratory blow and subcrepitant râles, most abundant on right side in front. He has had occasional hoarseness for six or eight months. This has grown rapidly worse in last ten days, with irritation of larynx, hoarseness of voice almost to extinction, and much difficulty and pain in deglutition. Epiglottitis is thickened and distorted, and left aryteno-epiglottidean fold swollen, and encroaching upon cavity of larynx to such an extent as to obstruct view of vocal cords. Patient has had cod-liver oil since September 1. Last two days spraying of larynx once a day with sol. nitr. silver, gr. v to ʒj, also three times a day with a 2 per cent. sol. cocaine before eating."

At present he has the characteristic appearance of a consumptive, is considerably emaciated, cannot speak above a whisper, and swallows liquids with much difficulty; He has bronchial breathing at the apex of both lungs, and below this, especially on right side, subcrepitant râles take the place of the normal vesicular murmur. Laryngoscopic examination reveals an œdematous and congested state of aryteno-epiglottidean folds and the epiglottis much thickened, interfering with deglutition. Ordered diet of milk, eggs, rare beef and corn-starch. To have ol. morrhue and

whisky, and to use steam atomizer with wine of ipecac.

September 23. Morning temperature has been normal and evening temperature has been about 101° daily. Expectoration profuse. Cough harassing, and breathing labored on account of condition of throat; deglutition somewhat improved. Treatment continued, to use also ammon. hydrochlor. sol. in atomizer.

September 27. Condition slightly improved. Continue treatment.

October 3. Patient states he has gained 8 lbs. since admission to hospital. Laryngeal symptoms remain unchanged; less expectoration. Temperature range A.M. normal, P.M. about 100.4°. Is taking ol. morrhue and beer. Is using a spray of tr. ferr. chlor., alternating with a spray of vin. ipecac.

October 10. Condition continues about the same. Throat sprayed twice daily with Dobell's solution and sol. cocaine, followed by application of equal parts of tr. iron and glycerine. Deglutition seems improved. Continue treatment.

October 20. Evening rise of temperature less, about 99.6°. General treatment continued. Is losing in weight and strength.

October 27. Patient is gradually failing. No ulcers apparent in throat yet. Continue general treatment.

November 6. Patient very weak. Expectoration profuse, cough harassing, deglutition much impaired, but the patient is very hopeful. Ulceration of the cords apparent, though a good view cannot be had. Continue treatment.

November 12. Patient is failing slowly, is now confined to bed. There is apparently a large cavity in right lung and left lung seems much involved; cough harassing, expectoration profuse. Supported by milk-punches. Swallows with difficulty. Treatment continued.

November 16. Scarcely able to swallow anything; very weak, failing slowly.

November 17. Very weak. Refuses to take nourishment by mouth. Ordered enemata of beef-tea and whisky every three hours.

November 19. Very weak; supported by enemata of egg-nogg, beef-tea, milk, etc.

November 20. No change.

November 21. Died at 2:25 P.M.

Necropsy twenty hours after death. Body greatly emaciated; rigor mortis passing off. Upon opening the thorax the pleura was found firmly adherent to the chest wall and diaphragm (entirely obliterating the pleural cavity), requiring considerable force for its detachment.

Pericardium contained about 60 cc. of clear serous fluid.

Heart normal. The cavities contained each a small amount of dark blood clots, and large fibrinous clots extended from them several inches into the large vascular trunks.

Lungs were studded with miliary tubercle, increasing in quantity from apex to base; on section the tissue seemed exsanguine, of a grayish color, dotted with the black tubercle and filled with numerous cavities, varying in size from a pin to a small orange, containing offensive pus, with the exception of a small portion at base of each lung which was highly congested, with tubercle throughout its substance. All the smaller bronchial branches were obliterated by the tubercular deposit in the surrounding portion of the tissue. Fibrinous bands were found between the lobes and the larger cavities were lined by a similar membrane.

Larynx.—The upper part of posterior portion of the thyroid, the arytenoid, the epiglottis, and the ligaments and attachments corresponding to these, with the vocal cords, were destroyed by ulceration.

Abdominal viscera not examined, and cranium not opened, as it was deemed unnecessary.

NOTES ON TWENTY-SEVEN CASES OF DIPHTHERIA,

OCCURRING BETWEEN JULY 1, 1888, AND JANUARY 1, 1889.

Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, January 19, 1889.

BY HENRY JACKSON, M.D.,
OF BOSTON.

From July 1, 1888, to January 1, 1889, I treated twenty-seven cases of diphtheria out of 1,031 cases of all kinds, seen in the second district of the Boston Dispensary, situated on the West side of Hanover street. Of these cases, five died; four of septicæmia, one of laryngeal obstruction.

Five cases were very mild; two were not confined to the bed.

In most of the cases the membrane was confined to the uvula and pillars of the pharynx. In these cases a large part of the roof of the mouth and lips was covered with membrane. Fifteen cases occurred in houses where the sanitary condition was bad. Ten case where the sanitary condition was apparently good. Two cases in a house that seems to be in good condition, and yet one where I have found much sickness in the last two years, notably diphtheria last winter.

Where there were several children in a family, usually one or more cases of diphtheria appeared shortly after the first cases. Namely:

In a family of three children all had the disease.

In a family of five children four had the disease.

In a family of three children two had the disease; later in the year two members of this family had typhoid fever. In all cases the disease was strictly confined to the house where it first appeared, and in only one instance did the disease

spread to other families living in the same tenement.

Of the twenty-seven cases four were young adults; the average age of the children was 5 years, the youngest being 18 months.

As of importance in making an early differential diagnosis between diphtheria and follicular tonsillitis, I have found that in diphtheria:

1. The temperature was much lower, often normal.

2. The constitutional symptoms were usually less severe at first.

3. The glands about the neck were more swollen and tender.

In all cases I have felt justified in making a diagnosis of diphtheria where there was membrane on the uvula or on the pillars of the pharynx.

As last year I could report that, having had in my charge in this district a large epidemic of scarlet fever, I was not aware of having carried the disease to a single child, so this year not a case of diphtheria has occurred in a family that was under my care for other diseases.

In other words, so far as an opinion can be formulated from so small a number of cases, the disease is very infectious to young children brought in immediate contact with those sick; the disease does not spread from house to house; the disease is not easily carried by a third person.

The following list shows the character and distribution of the various infectious diseases in the portion of the city above described, during like periods of two successive years.

JULY, 1887, TO JANUARY, 1888.

Diphtheria	8
Tonsillitis	57
Scarlet fever	68
Measles	5
Typhoid	24

JULY, 1888, TO JANUARY, 1889.

Diphtheria	27
Tonsillitis	33
Measles	5
Scarlet fever	1
Typhoid	23

MEDICAL PROGRESS.

NERVE-GRAFTING.—At the meeting of the Clinical Society of London, on January 25, MR. MAYO ROBSON showed a girl, æt. 14, on whom he had successfully grafted two inches and a half of the posterior tibial nerve into a corresponding gap in the median nerve in the forearm. He also showed the tumor which had involved the median nerve, and had necessitated its removal. The history of the case, briefly, was that the patient had noticed the tumor growing for six years, but that it had grown more rapidly during the past twelve months, during which time it had

caused considerable inconvenience as well as deformity. The tumor, about the size of hen's egg, extended from the annular ligament in front of the right wrist up the forearm for about three inches, reaching laterally from side to side, the skin being firmly stretched over, but not adherent to the tumor, which appeared to be solid or semi-solid. On making an incision over the swelling the tumor bulged through the wound, and was easily separated from its cellular bed, leaving the mass attached above and below to a cord, which appeared to be inseparably blended with it. The attachments had therefore to be cut through. A microscopic examination showed that the cord was composed of nerve tissue, and on the patient recovering from the anæsthetic the parts in the hand supplied by the median nerve were found to be devoid of sensation. Arrangements were made by Mr. Robson to graft the sciatic nerve of a rabbit into the gap of the median nerve, but fortunately his colleague, Mr. Ward, kindly allowed him to arrange his operation at the same time that he was amputating a thigh, and to utilize the posterior tibial nerve, which was taken straight from the amputated leg into the prepared forearm, the transfer from one theatre to the other being made in a warm carbolic solution. Two inches and a half of nerve were utilized, the ends being attached to the proximal and distal portions of the median with a fine catgut suture, without the slightest tension either on the stitches or the nerve; the wound was well washed out with perchloride of mercury lotion and carefully sutured. Healing occurred by first intention. The grafting was performed forty-eight hours after the tumor had been removed, and thirty-six hours after the nerve had been grafted, sensation had so far returned in the parts supplied by the median that the touch of a pencil could be localized. Day by day sensation became more and more distinct, until when shown to the members of the Leeds and West Riding Medico-Chirurgical Society, five weeks after the operation, it was so perfect that the slightest touch could be localized, and although there was manifest diminution in volume of the abductor and flexor brevis pollicis, they were not completely paralyzed. Mr. Mayo Robson, after relating experiments on animals, which went to prove that reunion and even regeneration of nerves might occur, remarked that in such cases, where there had been absolute loss of nerve, return of function did not occur. He thought the case he had related presented very important physiological and clinical features: physiological, in that the living nerve must have immediately united and taken on function, so that thirty-six hours afterwards the distal portions of the median were functionally active; clinical, in that, if nerve grafting to such an extent could be certainly relied on, many hitherto hopeless cases may be

cured—for instance, in injury of an extremity with destruction of one or more chief nerve trunks, in the case of a tumor involving nerves, in paralysis due to cicatricial destruction of nerve, and in many other cases. He ventured to hope that, if, as in this case, two inches and a half of nerve would live, further experiments might show that greater lengths might survive; or if such were found to be impossible, that the grafting might be done piece by piece as in the case of bone grafting. The condition which he advised to be observed in such operations were: first, entire absence of tension in the grafted nerve—*e.g.*, two inches and a half being employed to fill an interval of two inches and a quarter; secondly, great care in dissecting out and handling the nerve; thirdly, immediate transference of the living tissue into its new bed; fourthly, the employment of only a single suture to fix the ends of the nerves; and fifthly, strict asepsis. He thought that this case, if he had correctly interpreted it, went to disprove the theory that a primary union of the divided ends of a nerve is only an appearance of union, and not a physiological one, and that the distal ends must pass through a process of degeneration before regeneration. He remarked that the return of function in the motor portion of the nerve was more gradual than in the sensory, and made suggestions which he thought might explain the difference. MR. BRYAN¹ asked whether the suture had included the whole thickness of the nerve. MR. BOWLBY observed that the case seemed likely to prove a successful one, but at present it was not entirely so. It was the first recorded case of nerve grafting in this country, although a number of experiments and operations had been published on the Continent. This was the first case of primary grafting of a nerve—that was, within forty-eight hours of the injury. He pointed out that in a certain number of instances there had been restoration without re-establishment of continuity of the nerve. He had quoted several instances of the kind in his lectures at the College of Surgeons.¹ Still, on examining that particular patient, he found more sensation than he had ever seen before under similar circumstances. The condition of the muscles was not quite healthy, but still satisfactory. He mentioned as a curious fact that the power of voluntary motion often returned long before there was any reaction to electricity. He had remarked a bulla on the tip of the patient's index finger, which seemed to point to a trophic lesion. He questioned the accuracy of the view generally held, that after primary suture of the two ends of a divided nerve the lower end necessarily underwent degeneration. In a case in which he had brought the ends together, although fully an inch had been cut out, complete restoration of function ensued in a few days. In another case in which

¹ Vide the Lancet, Vol. ii, 1887.

union by primary intention took place, although there was no paralysis, yet for a long time there was no reaction to electricity. He also pointed out that sensation was a very vague term, and might exist in very varying degrees. Mr. Robson's patient still experienced numbness and tingling in the fingers, showing that sensation, if good, was not perfect. MR. BLAND SUTTON urged that it did not follow, because restoration of function had taken place after joining the cut ends of the nerve by means of a piece of the posterior nerve, that the latter had become incorporated with the median nerve. In experiments that had been carried out on animals it seemed that anything which acted as a conductor, so to speak, along which the reparative material passed, bits of chicken bone, catgut, etc., had been found to answer the purpose. The bullæ which had been noticed generally took some time to form, and he suggested that the patient was now getting the symptoms which would have followed had the grafting not been effected. He hoped that the future progress of the case would be carefully watched, and the additional information added to the report when published in the Transactions. THE PRESIDENT mentioned the case of a man from whom, in the course of an operation for the removal of a tumor, he had accidentally removed a large piece of the external popliteal nerve—too much, in fact, to admit of the ends being brought together. Loss of sensation and muscular degeneration followed in the parts supplied by the nerve, and the patient left the hospital in a rather unsatisfactory condition as regarded the leg. Some months later he looked the patient up, and found to his surprise that function had been restored, and the patient said he was as strong in the leg as ever he was. MR. MAYO ROBSON, in reply, admitted that the case was not yet an unqualified success, but its progress had been so uninterruptedly satisfactory that he quite anticipated it would ultimately become so. He had passed a very fine catgut suture through the whole thickness of the nerve. He observed that even if the piece of the posterior nerve had not become incorporated with the median nerve, yet, in view of the successful issue of the case, most persons would be inclined to commend the course that had been adopted.—*Lancet*, Feb. 2, 1889.

HYDROXYLAMIN IN SKIN DISEASES.—DR. EICHOFF, of the Municipal Hospital, Elberfeld, has found an admirable substitute for pyrogalllic acid, chrysarobin, and other powerful reducing agents used in external applications for skin diseases in hydroxylamin, which is, chemically speaking, an ammonia in which one of the atoms of H is replaced by HO. The most suitable compound for dermatological use is the chloride, the formula of which is $\text{NH}_2\text{OH}.\text{Cl}$. This occurs in colorless,

strongly hygroscopic crystals, which are readily soluble in water, glycerine, or spirit, the solution showing an acid reaction. When introduced into the blood, hydroxylamin forms methæmoglobin, the blood rapidly becoming of a deep-brown color. In large doses—that is to say, 0.01 gram per kilogram of body weight—it produces hematuria in consequence of the destruction of the red corpuscles. It also acts on the nervous centres, producing narcosis. The high reducing power possessed by hydroxylamin renders it a powerful poison to low organic forms, and on this account it is to be very strongly recommended in dermatology. The preparation used by Dr. Eichoff is the hydrochlorate dissolved in a mixture of equal parts of glycerine and spirits of wine in the proportion of 1 per 1,000. This is applied with a brush to the affected parts of the skin, which must first be carefully washed with soap three to five times a day. In this way he has treated five cases of lupus, five of ringworm, and one of parasitic sycosis, with excellent results. These were specially remarkable in two cases of very severe lupus. Dr. Eichoff is hopeful that this remedy, which may sometimes perhaps be applied in the form of subcutaneous injections, may be found useful in psoriasis, parasitic eczema, and even in lepra and syphilis. He, however, warns those who propose to try it that it is a very powerful irritant, and that even for outward application a strength of 1 per 1,000 is quite enough.—*The Lancet*, February 9, 1889.

ACTION OF PARALDEHYDE.—DR. JOHN GORDON, of Aberdeen, after an extensive series of experiments and observations in regard to paraldehyde, summarizes his results as follows:

1. Paraldehyde caused an increase in the excretion of urea.
2. It did not in any marked way affect the quantities of chlorides excreted.
3. It did not invariably increase the excretion of the fluid constituents of urine, but in the majority of cases which I have recorded it diminished them.
4. The odor of paraldehyde, when given in large doses, was found in the urine, showing that some of it probably passed unchanged through the system.
5. After the full dose of the drug the respirations were slowed, and rendered tranquil and steady.
6. It had no appreciable effect on temperature.
7. In cases of average health without sleeplessness it did not have any hypnotic influence except in large doses.
8. It caused no loss of appetite.
9. There was sometimes a tendency to perspiration under its influence, which atropine controlled.
10. The blood-pressure was only slightly reduced by the smaller doses, the larger dose reducing it more, but only after distinct slowing of the respiration.
11. The pulse was slowed.
12. It diminished the reflex excitability of the spinal cord.
13. It had a peripheral influence in controlling sensation.
14. It speed-

ily diminished, and in large doses destroyed, the irritability of motor nerves. 15. Equal doses diminished the excitability of motor nerves sooner than that of muscle. 16. Small doses first slightly excited and then diminished the excitability of muscle substance. 17. Large doses speedily destroyed (temporarily) the irritability of muscle substance. 18. There was a tendency to complete recovery in the muscle after a small dose, but seldom complete recovery after a large dose. 19. Curarized muscle showed increased excitability over non-curarized muscle when treated with an equal dose of paraldehyde and equally stimulated.—*British Medical Journal*, March 9, 1889.

CHLOROFORM IN DYSPEPSIA.—Chloroform administered in the various forms of dyspepsia overcomes fermentation and flatulence; it is best given in one of the following formulas:

1. *Method of DR. WILS.*—From ten to twenty drops of chloroform, to be taken in a few spoonfuls of sweetened water, in flatulent dyspepsia. After a few minutes eructations occur, followed by improvement.

2. *Method of DR. HUCHARD.*—Administer before each meal one dessertspoonful of the following:

R. Chloroform water	150 parts.
Mint water	30 "
Water	120 "
℞.	

Or, from eight to ten drops of the following mixture in a wineglass of water:

R. Tincture of nuc. vomica	} āā 3j.
Tincture of gentian	
Tincture of anise	
Chloroform	gtt. xx-xl.
℞.	

An appropriate diet and oxygenated waters at meal-times form part of this treatment.

3. *Methods of DRS. REGNAULT and LASÈQUE.*—This treatment applies particularly to painful dyspepsias with dilatation of the stomach:

R. Chloroform water	150 parts.
Orange-flower water	50 "
Water	100 "
℞.	

One dessertspoonful to be taken, at intervals of fifteen minutes, until the pain ceases.

Or the following for the same affections:

R. Chloroform water	150 parts.
Tincture of anise	5 "
Water	145 "
℞.	

—*Revue gén. de Clin. et de Thérap.*, Feb. 28, 1889.

ANTIPYRIN IN LABOR.—DR. ERMANN PINZANI recently made a communication to the Società Medico-Chirurgica di Bologna,¹ in which he gave an account of some experiments he had made with the view of ascertaining the effect of antipyrin on the strength of the uterine contrac-

tions in labor. Two series of experiments were made. In five cases he simply kept his hand on the woman's abdomen for some hours, and noted the condition of the uterus before and after the administration of the drug. In eight other cases (on which he made in all twenty-three experiments) he passed an India-rubber ball, first disinfected, and then filled with a watery solution of corrosive sublimate, into the uterus; this he connected with a manometer, which gave him an accurate gauge of the pressure exerted by uterine contractions on the fluid in the ball. Dr. Pinzani was careful to exclude irritation of the uterus by the foreign body as a source of fallacy by previously warming the fluid in the ball to the temperature of the body, and by waiting for some time after its introduction before making observations. In the first set of experiments, 3-gram doses of antipyrin were given by the mouth; in the second, the doses were from 1 to 2 grams. Dr. Pinzani came to the conclusion that antipyrin relieves the pains of labor simply by lessening the force of the uterine contractions. The effect of the drug showed itself in about two hours after hypodermic injection, and four or five after administration by the mouth. He noticed that infants suckled by women who had had antipyrin given them during labor were apt to suffer from diarrhoea. Dr. Pinzani's verdict is, therefore, decidedly against the use of antipyrin in midwifery practice.—*British Medical Journal*, March 9, 1889.

IGNIPUNCTURE OF THE TONSILS.—DR. WILHELM ROTH, of Fluntern, finds that in order to reduce the size of the tonsils without risk of troublesome hæmorrhage, which is not uncommon, especially in young subjects, the best plan is to employ ignipuncture, as has been recommended by Krishaber, and more recently by Verneuil. The tonsils and neighboring parts are first brushed over with a 10 to 20 per cent. solution of cocaine. The finest point of the thermocautery, heated to redness, is then inserted to a depth of about five millimetres in three or four spots a few millimetres apart from one another on the tonsils. The instrument is not allowed to remain more than one or two seconds in the tissue. The whole operation, including both tonsils, can be performed in a very few minutes without any bleeding, and with scarcely any pain. It must be repeated four or five times at intervals of two or three days, and this is usually sufficient to cause the tonsils to return to their ordinary condition.—*Lancet*, Feb. 16, 1889.

TREATMENT OF INGROWING TOE-NAIL.—DR. THEODOR CLEMENS, of Frankfort, strongly recommends the employment of tinfoil in the treatment of ingrowing toe-nail. He first has the toe thoroughly washed with soap and carefully dried. He then envelops the whole nail with

¹ *Gazzetta degli Ospitali*, February 10, 1889.

tinfoil, putting a strip between the portion that grows in, and the raw surface caused by it. The tinfoil is fixed by means of a very thin layer of common wax, and the patient told not to wash the part, but to use dry bran for rubbing off the dirt. Of course the toe has to be repeatedly dressed with tinfoil, but, if the operation is carefully performed, it is surprising how long the tinfoil will remain intact; even when the patient is, as was usually the case in Dr. Clemens' hospital practice, very poor and very badly shod. The results are stated to have been most satisfactory, and are ascribed by Dr. Clemens not merely to the mechanical action of the tinfoil, but to the effect of the permanent contact of a combination of metals comprising iron, copper, arsenic, molybdenum, wolfram, and bismuth, with a moist and growing portion of flesh. This, he says, brings about in a few weeks the complete healing of the sore, and causes the nail to grow more slowly, and in a more healthy manner.—*Lancet*, Feb. 16, 1889.

TREATMENT OF VALVULAR DISEASES OF THE HEART.—DR. DA COSTA in the course of a valuable and suggestive paper says: "From adonidine I have witnessed, in $\frac{1}{10}$ to $\frac{1}{2}$ grain doses three times a day, some admirable results; but more in cases of functional than of valvular diseases of the heart. Yet even here I have known it to act as an excellent heart regulator." Chloride of barium he finds both a general and a cardiac tonic, a remedy that increases the tone in the blood-vessels, a fairly good diuretic, and one that can be taken for a long time without disordering the stomach. He usually gives it in doses of $\frac{1}{10}$ grain three or four times daily; overdoses are apt to produce diarrhoea. It seems also to lessen cardiac pain." He finally says: "I must not bring this paper to a conclusion without mentioning a point of which I know the great value—to make periodical examinations of persons affected with valvular disease. I am not speaking of those in whom serious symptoms call for constant supervision; rather of those who, under our advice, take little or no medicine. In them, too, it is true that the heart of to-day may not be the heart of a month hence. Yet they are the ones chiefly in whom beginning changes can be most readily met, and whose lives, with the aid of treatment when necessary, can be greatly prolonged. Let them be made aware of the importance of skilled supervision. It will not mean needless interference; it will mean judgment as to when interference is really helpful.—*Amer. Journal of the Med. Sciences*, November, 1888.

NEW OPERATION FOR EMPYEMA.—PROFESSOR M. S. SUBBOTIN, of Kharkoff, describes in *Vratch* (No. 45) a new operation he has devised for opening the thoracic cavity in empyema, with the

view of obviating the dangers arising in Estlander's operation and in the modifications of it practiced by Schede and Sprengel from the extensive raw surface which is necessarily allowed to remain in contact with the purulent discharge. The patient having been chloroformed, an incision was made along the seventh rib, which was then stripped of its periosteum and excised to the extent of 7 or 8 centimetres. An extensive opening was here made into the pleural cavity. After the pus had been evacuated the cavity was carefully cleansed and the opening well covered with gauze, and a gauze compress applied. An incision was then made along the border of the pectoralis major about 5 centimetres in length, exposing the sixth, fifth, and fourth ribs, and these were cut away (the periosteum not being left) with forceps until the rib became movable. Another incision was then made in the line of the posterior fold of the axilla, exposing the same ribs, which were again divided as before; the wounds were then sutured and dressed with gauze, a large thick pad of the same substance being applied outside, with a good compress bandage round the thorax. The upper wounds were kept from communication with the empyema. When after a few days the intrathoracic wound was dressed, a drainage tube was put in. The case recovered, but three months after the operation there was still a small sinus which continued to discharge. The advantages claimed by Professor Subbotin for his operation are the small raw surface which is left in contact with the purulent matter, and the firm but movable portion of the thoracic wall which can be pressed inward by bandaging, so as to diminish to a considerable extent the size of the cavity.—*Lancet*, Dec. 15, 1888.

NIGHT-TERROR AND SCREAMING IN A CHILD CURED BY REMOVAL OF THE TONSILS.—The patient, a boy, æt. 7, seemed to be quite well all day, but every night, after he had been asleep some little time, he used to wake up in a state of great terror. In a short time he got over the attacks, and would lie down to sleep again. He was examined, and nothing found except large hypertrophied tonsils. These were conjectured to be the cause of the symptoms. They were both removed. The child promptly got rid of his night-terror and screaming. It was presumed that in deep sleep, when he lay in some unfavorable position, the tonsils obstructed the respiration.—*The Lancet*, Oct. 6, 1888.

TREATMENT OF ERYSIPELAS.—DR. NOLTE reports that for several years he has had good results in the treatment of erysipelas with mucilage of acacia and carbolic acid (3 to 5 per cent.). The affected locality, and the adjacent skin, is painted over twice daily with the mixture, which is then allowed to dry.—*Therapeutische Monatshefte*, January, 1889.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, APRIL 6, 1889.

THE UNION OF MEDICAL SCHOOL AND
UNIVERSITY.

Continuing the discussion of this subject, begun in THE JOURNAL of last week, it is proper to inquire as to the specific advantages belonging to the university system of medical education. In the first place, says Dr. Welch in his address, "this system may be expected to maintain the proper balance between purely technical training in the medical art and cultivation of the medical sciences upon which this training should be based, or to express the same idea perhaps more intelligibly. . . . between the practical and the scientific side of medicine." We would not give this particular advantage the first place, however. We should say, the *proper* union of medical schools with universities would insure that amount and degree of general education without which no one is fitted for the study of medicine. Under the term "general education" we would include *preliminary education for the study of medicine*. We believe the time will come, though our belief may be Utopian, when the medical schools will require as a condition of matriculation that each student shall have pursued a course of study looking to the study of medicine. The hope for this lies in the proper and true union of the medical school with the university; not a mere "affiliation," not a nominal connection, but an organic union.

The scientific branches of medicine receive too scant recognition and attention. "In a medical school permeated by the university spirit," says

Dr. Welch, "and in intimate association with a university, these sciences cannot fail to receive proper recognition." Without wishing to appear unnecessarily critical, we would add to "the university spirit" the scientific spirit, which could scarcely fail to be engendered by a proper preliminary course to the study of medicine. How much more willingly, and how much more rationally would the medical student pursue his courses of human anatomy and histology if he studied them in the light that he has gained by a study of comparative anatomy, embryology, and biology! How much more intelligently would he study physiology if he were a physicist and chemist. "Physiologists," says Du Bois-Reymond, "should regard themselves as chemists and physicists who work only in a particular direction." Pathology requires the light of biology, physics, and chemistry. In a word, as was pointed out by Dr. Gairdner in his Presidential address before the British Medical Association last year, and aptly illustrated by Dr. Clifford Allbutt in his address in medicine, the true physician must be and is a naturalist—a *Naturforscher*—and this no one can be who neglects the necessary educational basis of a naturalist. "Universities," says Dr. Welch, "have always kept alive the ideal that the interests of life are not wholly material, but that they are spiritual and intellectual as well. May the time never come when this ideal shall be replaced by the estimate of knowledge, solely for its commercial value, or its immediate application to the practical necessities of life. Somewhat of this true university spirit should pervade medical study, if the practice of medicine is to be a profession and not a trade or a handicraft."

Dr. Welch then goes on to speak of the scientific spirit that would be engendered in a university medical school of the character indicated. While it is not claimed that the desired results are possible only in a medical school in a university, it must be admitted that the atmosphere of a university is particularly favorable, and that of an independent medical school unfavorable for their attainment.

Few university men, or thinking men, will take issue with Dr. Welch in his opinion that the last two years of a medical course should be given mainly to the study of the practical branches of medicine; and this study should be more practical

and demonstrative than it is at present. In speaking thus the two-course schools are left out of consideration, as they should be out of existence. A shorter period of medical study than four years seems to Dr. Welch possible only with a preliminary medical training such as is already furnished with excellent results in some of our universities, and with a supplementary experience in a hospital.

Still another benefit to be derived from the proper union of medical school and university is the encouragement of research, which naturally follows the existence of the scientific spirit. With this spirit, and with well-equipped laboratories, workers will be abundant, the university will win renown, and medical science will make progress. There will be workers here, as in other countries, that seek the truth for its own sake, whenever and wherever it can be found, without regard to its immediate practical value. Medicine offers all the attractions and fascinations of a natural science; all that we need to make workers and to encourage research is the scientific spirit, and laboratory facilities. "When America does wake up to the necessity of these things," said a distinguished German physiologist, "then let Europe look to her laurels." America will wake up to the necessity of these things when the general public better understands the cost of sickness and the money-value of health.

A very practical advantage in making a medical school a department of a university is economy of organization. "A university provides for the study of certain subjects which either are included in a medical course, or should be required in a course preliminary to the study of medicine. The most important of these subjects are chemistry, physics, botany, zoology, and comparative anatomy." In the medical schools of this country chemistry is the only one of these sciences that has any place in the curriculum, and even this is an unsatisfactory feature, physiological chemistry being generally altogether ignored. As the matter now stands, organic and inorganic chemistry, which should be entirely acquired in the preliminary course, are the only branches of the science taught, in the medical schools.

ENLARGED TONSILS AND THORACIC DEFORMITY.

It is now a well-recognized fact that certain cases of hypertrophy of the tonsils are accompanied by a special deformity of the chest, at a point corresponding exactly with the union of the inferior and middle third of the chest-wall. This deformity, first noticed by Dupuytren, is the subject of an interesting paper by M. BILHAUT, in the *Annales d'Orthopédie et de Chirurgie pratiques*, No. 6, 1889. The deformity was at first attributed to rachitism. Further study of the subject, especially by Coulson, of London, and Mason Warren, of Boston, showed that there was more than one chest-deformity present in cases of hypertrophy of the tonsils. - Two distinct classes were differentiated: in the first are placed the rachitic deviations in subjects of enlarged tonsils; the second class comprises those cases only in which the thoracic deformity is essentially due to tonsillar hypertrophy. It is the second class that M. Bilhaut discusses.

Lambron not only described this deformity, but he differentiated the analogous lesions, and indicated the most rational treatment. "The ribs forming the median part of the thoracic walls are more or less depressed or sunken, so that these bony arches present an incurvation opposed to their natural curvature, and the maximum of this incurvation corresponds almost exactly to the middle points of the bones. As a rule, the upper part of the chest is not involved by the deformity, but retains its normal form, and, if it appears more convex, if the ribs appear to be more prominent, and more curved outward, it is, in most cases, due to the contrast between the natural curvature of the upper, and the unnatural depression of the median ribs. The condition of the sternum is in perfect accord with that of the costal walls; it is markedly sunken at the union of its middle and lower third, but for the remainder of its extent preserves almost exactly its normal form. The incurvation of its lower part gives the appearance, by contrast, of its upper part being much more prominent than normal." The existence of this deformity does not exclude those of a different nature, such as scoliosis, kyphosis, Pott's disease, etc., and one of these lesions may be found in a patient with the thoracic deformity due to tonsillar hypertrophy.

One of the most notable contributions to the

literature of this subject is a *Thèse* sustained before the Faculté de Médecine in 1881, by Dr. Gailard, of Chaton. This *Thèse* was the outcome of a most careful study of the etiology, symptomatology and treatment of this affection. He called special attention to the lateral flattening of the thorax and the projection of the sternum, giving the "pigeon breast." The difference between this alteration of the thorax and that due to rachitism is marked. In rickets the costo-sternal cartilages form a projection, and two vertical grooves extend from above downwards along the chest. The groove caused by tonsilar hypertrophy, however, is transverse, giving somewhat the appearance of a ligature having been maintained for a long time at the junction of the lower and middle third of the thorax. Alphonse Robart explains this deformity by a diminution of intrathoracic tension, the result, he claims, of impeded entrance of air. The narrowness of the upper air-passages impedes the entrance of air, while atmospheric pressure, being not compensated, causes the deformity of the flexible chest-walls of the young subjects. Bilhaut regards this theory as indefensible, and is inclined to adopt that of Lambron, who says, in regard to Robart's theory that atmospheric pressure should act in the same manner on all points of the thorax, and not on a limited portion. Lambron attributes the deformity to forced diaphragmatic respiration; and as a matter of fact the line of deformity is the line of insertion of the diaphragm. Yet it may be asked why a similar deformity is not found in emphysematous and asthmatic persons?

The first thing to be done in the way of treatment is to remove the enlarged tonsils, partly or wholly. If the deformity is sufficiently marked to require orthopædic treatment, Bilhaut advises corsets that exercise slight pressure on the broader portion of the chest. Sayre's plaster jacket may be used, says Bilhaut, but preference should be given to a laced corset. At the point of greatest circumference a layer of wadding or soft-rubber cushions may be placed. In very young children a simple corset will be sufficient as a rule. Massage and frictions should be utilized. It is useless to begin any method of orthopædic treatment, however, until the hypertrophy of the tonsils has been reduced or removed.

EDITORIAL NOTES.

DR. JOHN SWINBURNE died at his residence in Albany, N. Y., on March 28, 1889, aged 69 years. He had long been one of the most eminent members of the profession in that city. He had, at different times, filled the offices of Health Officer of the Port of New York, Member of Congress, and Mayor of Albany.

DR. R. L. HOWARD, of Montreal, Canada, died on the 28th of March, 1889. He was Dean of the Faculty of Medicine in McGill University, and well known as a leading member of the profession.

COLCHICINE IN OCULAR THERAPEUTICS.—At the meeting of the Société d'Ophthalmologie of Paris on February 5, M. DARIER said that since the discovery of salicylate of soda many ocular affections have been regarded as of rheumatic nature, and have been much benefited by this agent. This drug has been shown to be of great efficacy in cases of marginal corneal ulcers of arthritic nature, in certain cases of iritis, and in simple episcleritis, however intense, so long as the sclerotic tissue is not seriously involved and the cornea is not infiltrated. In the cases of scleritis with corneal complication, as well as in certain grave forms of serous iritis and of anterior sclero-choroiditis, neither salicylate of soda in large doses, nor salicylate of lithium show any efficacy. But with colchicine in doses of 2 or 4 millig. a day, says Darier, excellent results are obtained. In persons of gouty and rheumatic history colchicine is of signal value, especially in chronic and severe cases in which salicylate of soda has no effect. A patient with simple episcleritis may be cured easily by the salicylate, but if there is scleritis, with sclerosing keratitis, 2 to 4 millig. of colchicine should be given with the salicylate. In patients with hereditary accidents, and in whom the scleritis is the first manifestation of the arthritic diathesis, colchicine may be advantageously combined with benzoate of soda or lithia, or with carbonate of lithia, says Darier, if the antecedents are unmistakably gouty. It appears, however, that urate of lithium would be much better than the carbonate, which is a very insoluble compound in the animal fluids. Colchicine may be prescribed in the form of granules of one millig. each. One, two, four, and even six may be taken in one day, the patient

being instructed to lessen the dose when symptoms of colic occur. But no preparation of colicum is well borne for any considerable length of time.

REVISION OF THE UNITED STATES PHARMACOPŒIA.—We desire to direct the attention of all parties interested in the proper revision of the Pharmacopœia for 1890, to the official call for the *General Convention* of revision, found under the head of miscellaneous notices in the present number of *THE JOURNAL*. The Convention is to assemble in Washington, D. C., at noon, May 7th, 1890. "Every incorporated medical or pharmacal college, association, or society desiring to be represented in the Convention," should send to Robert Amory, care of Dr. Edwin N. Brigham, 19 Boylston Place, Boston, Mass., its corporate title and a list of its officers. For further information see the call in another column.

THE BUFFALO COUNTY (NEB.) MEDICAL SOCIETY has been recently organized, with the following officers: Dr. G. L. Humphrey, President; Dr. J. J. Porter, Vice-President; Dr. F. H. Duckworth, Secretary.

NURSING INFANTS WITH ASSES' MILK.—The public charities of Paris, says the *Scientific American*, under the advice of the physicians have substituted for the milk of goats that of asses, and have installed an ample yard near the pavilion of the rickety and scrofulous children, which is separated only by a short covered passage-way. A very picturesque scene is the spectacle of the lactation of the infants in this enclosure every morning. The women that have charge of the animals hold the children in such position that they can suckle the docile animals, which they do with avidity. The administration d' Assistance Publique has calculated that one young ass is able to lactate abundantly for nine or ten months.

ASSOCIATION NEWS.

American Medical Association. Fortieth Annual Meeting.

To be held in Newport, R. I., June 25, 26, 27 and 28, 1889.

SECTION ON STATE MEDICINE.

The following additional papers have been an-

nounced for presentation to the Section on State Medicine at the forthcoming meeting of the Association:

"The Necessity for Sanitary Supervision of Schools," Dr. George H. Rohé, Baltimore, Md.

"The Purification of Drinking Water for Cities," Dr. Charles V. Chapin, Providence, R. I.
A Paper, by Dr. A. N. Bell, Brooklyn, N. Y.

It is requested that gentlemen who have promised papers for this Section and have not designated the titles thereof, will send the titles to the Secretary as soon as possible.

In order to systematize the work of the Section, it would be a favor to have the names of gentlemen that desire to discuss any of the papers to be read before the Section.

S. T. ARMSTRONG,

Secretary of Section on State Medicine.

U. S. Marine-Hospital Service, New York, N. Y.

SECTION ON LARYNGOLOGY AND OTOTOLOGY.

The Secretary of this Section has written to about 200 of the best known laryngologists and otologists in the country, a number of whom have promised papers for the June meeting, so that the officers can assure the profession of a successful and highly interesting meeting.

Some who were uncertain as to whether or not they could find the time to write are now urged to definitely decide, and it is hoped that some who felt it impossible to do anything, will change their minds, and make an extra effort for this meeting. The few who have not replied to the Secretary's personal letter are earnestly requested to do so at once.

Titles of articles should be sent in as soon as the authors have decided upon their subject.

E. FLETCHER INGALLS, Secretary,
70 State St., Chicago.

W. H. DALY, President,
Pittsburgh, Pa.

The names and addresses of Section Officers and other officers of the Association are printed on advertising page 25.

Special Attention is called to the following Rules of the Association:

It shall be the duty of every member of the Association who proposes to present a paper or report to any one of the Sections, to forward either the paper, or a *title* indicative of its contents, and its *length*, to the Chairman of the Committee of Arrangements at least one month before the annual meeting at which the paper or report is to be read. It shall also be the duty of the Chairman and Secretary of each Section to communicate the same information to the Chairman of the Committee of Arrangements concerning such papers and reports as may come into their

possession or knowledge for their respective Sections, the same length of time before the annual meeting. And the Committee of Arrangements shall determine the order of reading or presentation of all such papers, and announce the same in the form of a programme for the use of all members attending the annual meeting. Such programme shall also contain the rules specified in the By-laws and Ordinances concerning the consideration and disposal of all papers in the Sections.

No report or other paper shall be entitled to publication in the volume for the year in which it shall be presented to the Association, unless it be placed in the hands of the Committee of Publication on or before the first day of July. It must also be so prepared as to require no material alteration or addition at the hands of its author.

Every paper or address received by this Association, or by a Section, and ordered to be published, and all reports of Committees, and all plates or other means of illustration, shall be considered the exclusive property of the Association, and shall be published and sold for the exclusive benefit of the Association.

ORDINANCES.

Resolved, That the several Sections of this Association be requested, in the future, to refer no papers or reports to the Committee of Publication, except such as can be fairly classed under one of the three following heads, namely: 1. Such as may contain and establish *positively* new facts, modes of practice, or principles of real value. 2. Such as may contain the results of well-devised original experimental researches. 3. Such as present so complete a review of the facts on any particular subject as to enable the writer to deduce therefrom legitimate conclusions of importance.

Resolved, That the several Sections be requested, in the future, to refer all such papers as may be presented to them for examination by this Association, that contain matter of more or less value, and yet cannot be fairly ranked under either of the heads mentioned in the foregoing resolution, back to their authors with the recommendation that they be published in such regular medical periodicals as said authors may select, with the privilege of placing at the head of such papers, "Read to the Section of the American Medical Association on the day of 18." (Vide *Transactions*, vol. xvi, p. 40.)

Resolved, That no report or other paper shall be presented to this Association unless it be so prepared that it can be put at once into the hands of the Permanent Secretary, to be transmitted to the Committee of Publication. (Vide *Transactions*, vol xvii, p. 27.)

SOCIETY PROCEEDINGS.

Massachusetts Medical Society,
Suffolk District.

Stated Meeting January 9, 1889.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY
AND HYGIENE

ALBERT N. BLODGETT, M.D., SECRETARY.

DR. HENRY JACKSON read a paper entitled

NOTES ON TWENTY-SEVEN CASES OF DIPHTHERIA, OCCURRING BETWEEN JULY 1, 1888, AND JANUARY 1, 1889.

(See page 482.)

DR. A. L. MASON opened a discussion on diphtheria with a report of 6 fatal cases of that disease in adults which had recently occurred in the new diphtheria ward at the Boston City Hospital. This ward, which was opened in April, 1888, was stated to be admirably adapted to its purpose, and the nursing was, in the experience of the reader, unequalled, because he knew of no other hospital in this vicinity where the nurses are systematically trained to take care of large numbers of diphtheria patients, a duty which they perform with the greatest intelligence and devotion. Under these favorable conditions for treatment, however, the mortality had been large, many patients, both adults and children, dying from septic poisoning, heart failure in convalescence, and tracheal obstructions. Their state at entrance was often very bad, sometimes moribund. Almost all cases admitted would be classed as severe.

Dr. Mason continued as follows: It will be well, then, to consider how fast this disease has grown upon us, from a few isolated cases thirty years ago, until it is now the most fatal endemic disease of a preventable nature which we have to contend with. The success of our board of health with smallpox makes it proper to assume that the mortality from all infectious diseases could be reduced to a minimum if similar methods could be adopted for their suppression. In this connection I will refer to the report of the Glasgow Fever Hospital, where by isolation and disinfection an improvement in the public health has been obtained.

There are obvious reasons why it is difficult to deal with diphtheria in this community, at present at least, in as summary a manner as with smallpox, although diphtheria is much less contagious, therefore more readily controlled; it is also more fatal, and in many cases it is entirely beyond the reach of medical or surgical aid.

During 1888 the number of deaths from diphtheria in Boston was 470, one third of all the cases reported. This is in excess of the whole number of deaths from yellow fever in Florida

during the recent epidemic, in which there were about 350 deaths in less than 4000 cases, 9 per cent.

At the City hospital, with the assistance of Dr. W. A. Morrison, house-physician, I have found that the records of the diphtheria wards show in 1888 the admission of 199 medical patients and 126 surgical; total, 325; 34 cases were transferred from the medical to the surgical department for operation on account of tracheal obstruction. It will be seen, then, that 160 patients, or nearly half the whole number admitted, required surgical treatment. Of the remaining 165, who were treated medically, 47 died, or 28 per cent. Under 15 years of age, there were 145 admissions with 40 deaths, 27 per cent. Between 15 and 30 years, 6 deaths out of 49 cases, 12 per cent. There were but five patients over 30 years of age, viz., one of 30, one of 31, two of 34, and one of 40 years. One died from tracheal obstruction which was not relieved by tracheotomy.

Direct contagion was reported in about one-fifth of the admissions, but the history in this respect is often deficient. Many of the worst cases come from among the Germans, Poles, Italians, and other foreigners. Two cases came from the same family in six instances; 3 cases, three times; 4 cases, three times; 5 cases, once. Thirty-eight cases from thirteen families.

Among the inmates of the hospital who took the disease were, one of the house-physicians, as previously mentioned, who died after a brief illness; three nurses employed in the diphtheria wards; one nurse in a distant ward; and one laundry maid; all of whom recovered.

In 1880, when the facilities for isolation were imperfect, there were but 71 admissions to the medical department, of whom 7 were hospital employes; 22 per cent. of cases died. In 1887 the rate of mortality, exclusive of surgical cases, was 29 per cent.

It is probable that a large proportion of the gravest cases occurring in the city come to the hospital, especially for tracheotomy. This necessarily makes a high death-rate; 47 per cent. out of a total of all cases admitted in 1887, 184 in number.

DR. G. H. LYMAN said the number of cases of diphtheria has certainly been very startling at the City Hospital, and they presented some features unlike those I have observed in former years. Since October 1st I think there have been under my service 30 cases; 8 of these were transferred for operation, leaving 22 cases, of whom 4 died. There has been another feature in connection with these cases that, I think, has been very striking, and that is the very weak pulse and the low condition of the patient in almost all the cases that I have noticed, certainly in a very large number. Out of these 22 cases there were 4 of distinct heart failure. One of them recovered; the other three died, and

died apparently from a paralysis of the heart; it was not thrombosis; they died easily, quite suddenly; there was no considerable effort required for breathing, no sudden excitement towards the last, which, I suppose, we should look for in cases of thrombosis. With the exception of these cardiac failures there have been none of the cases followed by any symptoms of paralysis elsewhere. In cases of typhoid fever we have had quite a number of patients recover apparently entirely from the typhoid, but we found several of them suffering from neuritis. I have half a dozen cases of neuritis following typhoid fever, but none following diphtheria.

The great prevalence of the disease, it seems to me, is a thing to which prompt attention should be given. I cannot think, in view of the statistics of the Glasgow Hospital Report, that it is a necessary disease. It seems to me something could be done to check it. We can check smallpox; Glasgow people seem to be able to check diphtheria. I see no reason why we cannot do it here as well. The Boston City Hospital has accommodation for twenty-five to thirty diphtheria patients. For a portion of the time the ward has been fairly full, I don't think so full that any cases have been obliged to be placed elsewhere.

The cases Dr. Jackson speaks of, of mild diphtheria or, granting a doubtful diagnosis, follicular tonsillitis, have been quite numerous. We have had a good many cases in which, for twenty-four hours, we did not attempt to make a positive diagnosis. There seems to have been a more constant accompaniment of tonsillar inflammation, distinct from diphtheritic disease, than I have ever noticed before. A good many have turned out to be tonsillitis, but some of them undoubtedly were diphtheria.

The importance of the thing, it seems to me, must be manifest to this Society, but I do not know how we are going to remedy it except through some action of the Board of Health. I think the subject is important enough for this Society to appoint a committee to consult with the Board of Health to see if there is not something to be done to check the spread of this disease. Dr. Jackson mentioned one point that was confirmatory of the general views on the subject; that the disease was decidedly infectious, and *not* contagious. I have always supposed that to be the case, but his statistics and those which the chairman has given bear out my opinion very strongly.

I am rather surprised at the great mortality that the statistics which have been presented give. I did not suppose, from my experience on the medical side of the hospital, that it was anything like that. I suppose the cases turned over to the surgical side were transferred too late, or were of such a character that no operation would relieve the patient. This would increase the general

mortality very much. The operation in a large number of surgical cases—cases extending to the larynx and requiring operation—is done in patients already reduced by the disease, and the mortality is very large indeed. Putting those aside I should say the mortality of diphtheria was small.

DR. DURGIN, Chairman of the City Board of Health: The appointment of a committee would please me very much. I have listened to the remarks with a good deal of interest, and I felt very greatly pleased when I understood that there was to be a portion of this evening taken up with the discussion of the prevalence of diphtheria in Boston. The cause of such a large number being treated at the City Hospital has already been given by the reader. The accommodations have been greatly increased in the past year and, in addition to that, the Board of Health have taken measures to send more patients there than ever before, in consequence of the increased accommodations. I have been somewhat surprised at the very large rate of mortality at the hospital, which undoubtedly is accounted for in a large measure by the fact that the *worst cases* come there; not all, but many of the worst cases, and particularly the surgical cases. The mortality for the whole city, however, has not increased this year; that is, the rate of mortality, the average percentage of mortality of the whole number of cases reported. I have brought in a transcript from the records to show the percentage of mortality of the number of cases reported for the last eleven years; that is, during the period over which we have called for reports from the physicians. I find that the percentage of deaths from diphtheria of the total numbers of cases reported for the past year was 33.18 per cent., and for the past five years the percentage has been 29.16 per cent. against 33.56 per cent. for the previous five years; there having been, as you see, quite a reduction in the percentage of deaths in the total number of cases reported in the last five years compared with the previous five years.

In 1878 we called for reports upon diphtheria, and the first year we received 1,370 reports, with 448 deaths, giving a percentage of 32.7 per cent. for the deaths. For the first five years there were 7,363 cases, and in the last five years 6,134. I wanted to say in this connection that the difference between the official treatment of diphtheria as contrasted with small-pox is certainly very great. In small-pox we have older people to deal with; the average age is considerably higher than with diphtheria, there is therefore less trouble in separating children from parents. In small-pox there is very great fear of the contagion; with diphtheria it is not as great. People will expose themselves and allow others to expose themselves to the one when they would avoid the other. A still greater difference between the two diseases is

in the matter of diagnosis. In small-pox it is very easy, and is almost always made at a very early stage. The physician either recognizes the disease himself at once, or calls an expert to make the diagnosis. In diphtheria it is not so. In diphtheria there is, as we know, oftentimes great difficulty in making a positive diagnosis. The child remains under suspicion for several days if not weeks, therefore the report to the Board of Health is delayed, sometimes until the child has died, and allows the consequent exposure more or less of other children to this disease, both to the family and to people who are liable to call at the house. Another difficulty in the way of treating diphtheria is the difference of opinion in the profession in regard to the true character of croup. There is a question in the Society as to whether croup and diphtheria are one and the same disease, and so long as that difference of opinion exists, so long we shall have a large number of cases of a contagious disease, call it what you may, that will spread from one person to another, and cause croup in our community. The cases are numerous where the disease has spread from one person to another in a family, and beyond the family, while the physician has persisted in calling it croup, and therefore not contagious. Another difficulty which stands in the way of successful treatment by isolation of diphtheria is the fact that in Boston we have no adequate hospital accommodation, notwithstanding the fact that the city has been somewhat generous in providing greater facilities in the past year; and the accommodations, I trust, have not been used to their utmost capacity yet; still, we are constantly running across families where it is almost impossible to separate the children from the parents, or from each other, and the patient remains at home, and thus we constantly have a very large number of points of infection through the city, which never exist with small-pox, and which we cannot overcome. It becomes absolutely necessary, if we would treat diphtheria as we do small-pox, that the Board of Health shall have some place to quarantine such a family, in order to disinfect the house. Again, with small-pox, we have the great advantage of vaccination, which cannot be overrated. There are, in spite of the best we can do, some insurmountable obstacles in the way of treating diphtheria and reducing its prevalence in our city as we might do with small-pox.

DR. GEORGE B. SHATTUCK: We are very grateful to Dr. Mason for bringing before us such a practical subject in such a practical way; and it is only by discussing such a subject in meeting, as we are doing to-night, that we can make some approaches towards creating precisely that public opinion which Dr. Durgin appeals to as necessary for the support of an executive body like the Board of Health; for it is very certain that a Board of Health is limited in its action, first of all by the

powers which the laws give it, and secondly, beyond that, by the condition of public opinion even where the laws support it in active procedures; and our expectations in regard to what the Board of Health can do must be controlled, even beyond and outside of what the laws allow, by the condition of public opinion, which limits what the Board of Health can practically accomplish. I think there is a great deal in the point Dr. Durgin has made with reference to the difference between diphtheria and small-pox. There is an utterly different feeling in the community with reference to small-pox, and one comes across it in all sorts of ways. I remember in a trial in court with reference to typhoid fever, it was perfectly simple to convince the jury and the judge that you could not have a case of small-pox without a preceding case, but as soon as we attempted to tell them they could not have a case of typhoid fever without a preceding case, that seemed to them very extraordinary, a very singular theory indeed, and they immediately wanted to know, if that was so, where the first case came from. With reference to small-pox that difficulty never came to their minds. The public does not reason about these diseases, and you can't do with reference to diphtheria what you do with reference to small-pox.

There is the question of diagnosis. Among some of our brethren who practice medicine, and especially sectarian medicine, a single individual may have three or four hundred cases of diphtheria in his practice in the course of a year, and of this probably the mortality will be absolutely nothing. I remember such an instance not long ago in Springfield, where a distinguished sectarian practitioner described to a society how he had had several hundred cases of diphtheria in the course of the preceding year without any deaths whatever. One of the society, who had taken pains to look up the returns at the registrar's office, showed him and the society that he was mistaken in regard to this. But, of course, the question of diagnosis is a very difficult one, and cases may be returned as diphtheria which are not diphtheria, and, on the other hand, it is perfectly easy to conceal such a disease as diphtheria, which has not any external manifestations. Whilst acknowledging all that, I still sympathize with the feelings which the chairman has expressed; and I think any one on duty at the City Hospital, where we have certainly an opportunity to see as much genuine and serious diphtheria as any other practitioners in this community, if not more, could not help wishing that something could be done. In some cases you cannot force patients to be isolated. I remember one of those unfortunate instances in which almost the whole family—the mother, a child at the breast, and two or three young children—were all brought to the hospital with diphtheria, and one of the children, I think, died; the father came and took the rest

of the family away and took them home against every remonstrance. It does seem as though such a thing as that ought not to be allowed to occur. The father took them back to the same house in which diphtheria had occurred a certain length of time before they had inhabited it, and he took them back there because, he said, he couldn't go anywhere else. He made an effort to get other lodgings, and it was known his family had had diphtheria, and he was driven back to the same lodgings. Such things are constantly presenting themselves to our attention and necessarily make us desire, if possible, that something might be done.

With reference to the mortality at the City Hospital, I don't think it is a large mortality, as mortality from diphtheria is recognized. I think that the statistics of the text-books and of other hospitals will show that the mortality is expected to range rather above 30 per cent. than below it. Many of the cases at the City Hospital are not only the worst cases, but are also, many of them, in the worst possible condition; and I think that it is rather surprising that under these circumstances the mortality should be as small as it is. Without going into the question of treatment I should like to say that, for many years, I have felt that the fact that the mortality has been kept at the point where it is has been largely owing to the extremely skilful and faithful nursing which these patients receive at the City Hospital. I don't believe that that class of diphtheria cases would stand anything like as good a chance anywhere else under other circumstances, and for such cases as these, whilst it is important to have a sensible and experienced physician, I cannot help feeling that it is of fully equal importance to have an intelligent, and faithful, and devoted nurse, who is always on hand to carry out the minutest directions in the most prompt, and regular, and efficient fashion.

DR. G. H. M. ROWE, Superintendent of Boston City Hospital: This is a subject in which I am much interested, as it involves so much experience in regard to the care of the patients with diphtheria at the City Hospital. The Board of Health for several years have appealed to us for greater facilities for the care of patients with contagious diseases. The same thing has been done in the City Hospital Report, in the Trustees' Report, and in the Superintendent's Report, for at least seven years previous to the time when we received our appropriation. Formerly these patients were taken care of in the mixed wards called K and L. The mortality was thought then to be large. The number of nurses who contracted diphtheria was very much larger then than it has been since the new wards were erected. It was only by publishing openly in the City Council the fact that patients had come in there with one disease and contracted another—nine cases in one winter, of whom

four died—that the appropriation was gained. I think it is an open question whether diphtheria wards should be attached to a city hospital; but it was Hobson's choice at that time. The Glasgow Hospital, which has been alluded to by Dr. Mason, is, as far as my knowledge goes, the finest hospital in the world, and the regulations for the separation and isolation of contagious diseases are the best I know of—rules we are not able to enforce at the City Hospital. Our new wards, of course, were experimental in a large measure, but experiments have proved that they are eminently successful in heating and ventilation. There is one fault that could be remedied, and that is that the fresh air supply is not equal to the exit. The system of ventilation is such that fetid odors are carried off rapidly. The accommodations have never been filled to their utmost capacity. We have accommodations for forty-two patients with diphtheria. At no time have there been more than twenty-seven, and it is rare that there are above twenty-two. In previous years the Board of Health has been clamoring for a place to carry these patients. The city government through its Council has supplied such a place, and yet it appears from statistics which are well known to the gentlemen connected with the hospital, that the mortality this year has been something that is, I may say, alarming. It is so much so, and recognized at the hospital to such a degree, that the nurses, although very anxious to see the result of the experiment, become depressed after they get into these wards, and are glad to be relieved and sent elsewhere. They work with the utmost faithfulness, and yet, patients who seem to be doing well often die suddenly from septic symptoms or heart failure. That has a very depressing influence upon the nurses. During the last week in November Dr. Prescott made some statistics. They are not made with reference to publication. They are very nearly the same as those by Dr. Mason. The total number of patients with diphtheria admitted this year was 337. Dr. Mason has given the statistics of the patients admitted on the medical side. I have those who were admitted on the surgical side up to about the 5th or 6th of December. To that date the total cases admitted on the surgical side was 139. Out of that number the deaths were as follows: Tracheotomy was done in 35; of that number 5 recovered and 30 died. Intubations, 71; 54 died and 17 recovered. By another classification, of those cases on whom intubation was first done and subsequently tracheotomy, comprising 16 cases, all died. Out of 17 cases on whom no operation was done, for various reasons, mostly because they were septic and operation deemed useless, 4 recovered and 13 died. That makes a total of 87 deaths. The total deaths were 53 per cent. at that time. The total admissions to the City Hospital in five years have been 960; in four out of five years 333 cases have died.

When the new wards were opened I sent a communication to the trustees recommending certain rules in regard to the isolation of the cases and to the limitation of visitors. It was decided that the practice of admitting friends should go on in a tentative way, and the attempt be made to limit them as far as possible. Practice has shown that what Dr. Durgin says holds true; it is almost impossible to shut out the parents from their children; and if any attempt of that sort is made they immediately take their child away. Our invariable rule is that patients with tracheotomies and intubations are considered as *dangerously* ill. The parents are admitted at all times before 8 o'clock in the evening. We are practically able to exclude all friends except the parents, but beyond that it is very difficult to go in wards attached to the hospital; it is only possible when we have them isolated and separated. The only way to bring this about has been intimated by Drs. Lyman, Shattuck, and others, and that is the creation of public opinion. If the Board of Health cannot do it by its rules and regulations and by expression of opinion through their published reports, and in various other ways; if the City Hospital through its annual report and that of the Superintendent and Trustees are not able to accomplish it, the only way out of it would seem to be that the profession, through its societies, in some formal way should try to educate the people to a better state of public opinion.

A conference with the board of health has been suggested. Until public opinion is created so that it shall influence the uneducated classes, and until some such legal restrictions are made for diphtheria as for smallpox, it seems to me impossible to stop it; when that period is reached it seems to me that a great deal will be accomplished in reducing the mortality, and also in reducing the amount of disease. At the present time there are 18 or 19 cases of diphtheria at the City Hospital. The ward for scarlet fever has been closed, with the exception of 2 cases for nearly three months.

DR. C. F. WITHINGTON: My experience of diphtheria, so far as hospital work is concerned, is limited to the out-patient department of the City Hospital; and I am sorry to say that patients with diphtheria come there, and it is not an infrequent occurrence to find, in looking over the patients in the morning, that a patient with diphtheria has been sitting in immediate contact with other patients in the waiting-room. That, I suppose, is not peculiar to the City hospital out-patient department. The same necessarily must happen more or less in all outside clinics. It is to be hoped that when the new building is completed at the City Hospital some opportunities will be found to question patients at least sufficiently to indicate the possible existence, not only of diphtheria, but of other eruptive diseases, so that these

patients can be removed from contact with the others.

A question which has been of a good deal of interest to me of late has been with reference to the comparative frequency of diphtheria in the various wards of the city. I would like to know if the records at the board of health's office show the distribution as to the wards of the city, because, it seems to me, that it is a matter of considerable importance. It is generally assumed that a great deal of the diphtheria comes from the North End districts, and other more crowded portions of the city. In Roxbury there is considerable prevalence of diphtheria for the last year. One of the cases reported—Case 3—I saw before she entered the hospital. Her surroundings were certainly not such as to give any clue to the origin of the disease in her case. In one house in that district, apparently in perfect sanitary condition, a well-built, large house, in 1876 there was a case of diphtheria in a woman of 60 or upwards, who died. The family then moved away. Two years later a young woman was confined in the house and died of puerperal fever. Her servant went home with a sore throat, which was serious, and whether she recovered from it I do not know. A sister of the lady sick with puerperal fever went home and developed typhoid fever; she was seriously ill. Another family took the house for a year or two, and in 1880 another case of diphtheria occurred in the same house in a child.

Last summer a lecture was published in the *Boston Medical Journal* in regard to the relative frequency of diphtheria in urban and suburban communities. The conclusion was drawn from some fifty different outbreaks of diphtheria, mostly in suburban communities, that in a pretty large number of cases of diphtheria it was impossible to trace the first case of the epidemic from a previous case. In only four out of fifty could the writer trace the first case from a previous case of diphtheria, and he was inclined to believe that a certain number of cases of diphtheria may develop from general insanitary conditions, possibly irrespective of a specific contagion from a previous case. That evidence was tolerably strong in his cases. He cites a number of parishes of over 1000 inhabitants which had a small number of cases of diphtheria in this period of years, while in another series of smaller parishes the frequency of outbreaks were proportionately large. The figures he gives seem to me not to be borne out altogether by the figures in this country, so far as I have been able to ascertain. The last monthly report of the New York State Board of Health, for instance, gives the frequency of the deaths from diphtheria for the month of November, 1888, in the different districts of the State, and of course the mortality by direct conveyance of disease from one to another would naturally be expected to be greater in the cities, but in spite of the fact that

treatment is more active there than in the country districts, the preponderance was greater in cities like Brooklyn, and Albany, and Troy, than in the back-country districts; whereas the report of Dr. Barnes just referred to gives a much larger number of occurrences in the remote districts than in the larger cities. I should like particularly to know whether the occurrence of diphtheria is very much greater in the wards in this city which approximate more nearly the country conditions than in the more crowded wards, or the reverse.

DR. DURGIN: I cannot reply with exactness; but in the past year the distribution has been scattered over the entire city much more than in any previous years. As a matter of guess-work, I believe that the percentage of cases of diphtheria in the population of the out-lying districts is rather greater than that in the more densely populated parts of the city. I think that Dr. McCollom could give a better opinion upon that subject than I, because he sees more of the cases. Dr. McCollom and his assistants usually see most of the cases, particularly those in the central part of the city.

I would like to call attention to one or two points in relation to this disease, and one is the repetition of the disease in the same patient. The text-books, I think, say that one attack seems to predispose the patient to subsequent attacks. Although my own personal experience has not been a large one, this statement of the text-books has not been borne out by my observation; and I have fallen in with very few physicians who have found that that was true. We occasionally hear a patient say that she or he has had diphtheria several times before. Of course that is partial evidence. I know that some physicians have seen a second and perhaps a third attack in the same patient. Of course, if this is largely true, it gives us a much less advantage in taking care of diphtheria than in taking care of most of the other contagious diseases. I should be glad to hear expressions of others who have had experience with diphtheria, on that point.

The matter of removing a patient with diphtheria from the City Hospital is a serious one; legally, I think, neither the trustees nor the board of health would have the right to retain such a patient contrary to his desire.

DR. ROWE: Of course we adapt our policy to the class of people we have to deal with. In a large number of cases we have dissuaded them from removing patients with this disease. In all cases where such patients remove them they are discharged as going on their own request and against advice. We have a printed form for such cases and at the end we state that they remove their child or friend, knowing the disease to be diphtheria and dangerous both to the patient and the public, and they take the entire re-

sponsibility, freeing the hospital and its physicians and the authorities from all responsibility. There is a certain more ignorant class to whom we say, "It is impossible to take your child away." We say it to the Poles and Huns. "You cannot do it without permit from the board of health." If we should make it a test case, there might not be sufficient power with the board of trustees to retain a given case. If patients are taken from the City Hospital, it should be understood that it is not done until after measures are used some, of which are fair and some perhaps not quite truthful, with the more ignorant classes, to retain them.

DR. G. B. SHATTUCK: I should be sorry if any gentleman present got the idea from anything I said, that I supposed, or meant to indicate that there was any power vested in the City Hospital or its board of trustees to prevent such an occurrence. I cited the occurrence to indicate to the society the position of public opinion, and the difficulties in dealing with this question, where such a thing as this was possible and legal, and could be done, and could not be prevented; and it is exactly one of those points which we want to educate public opinion to deal with, and to stimulate our lawmakers to make laws with regard to. With reference to the family I cited, the father there was a very independent, intelligent New Englander. If he had been a Pole or Polish Jew, or German or Austrian, then, as Dr. Rowe says, there would have been some hope of dealing with him, because he is used to a paternal form of government.

It is difficult to make our diagnosis in many of these cases. Then as soon as we have made our diagnosis, it is a pity we have not the power, by law or public opinion, to isolate our patients.

DR. DURGIN: In a case of small-pox we never take a child without its mother or sister with it if possible, and that generally constitutes all the visiting allowed in the hospital. In very few instances the mother has been allowed to come to the hospital after the child has been removed to the hospital, but is always retained until the anxiety is over, and then thoroughly disinfected and carried home. I don't think that the City Hospital trustees or the superintendent can be held to blame at all for the withdrawing of the patient. I don't understand that they have any legal right to retain them.

DR. G. H. LYMAN: I should like to ask the law on that point: if the law gives the board of health the power to isolate a small-pox case why should it not have the right to isolate a case of diphtheria?

DR. DURGIN: It has the same right.

DR. LYMAN: These patients come in by order of the board of health: ought not they to be retained until the board of health gives permission to have them removed?

DR. DURGIN: I don't understand that the board of health has control over a patient after entering the City Hospital. We have the power to start them for the hospital, but no control after they are in it, the hospital not being in charge of the board. The line where our authority begins and ceases in that case is not quite clear. I can only say that when we have left the patient in the charge of the officers of the City Hospital I don't understand that we legally have any further right, can exercise any further control over him. In our own hospital—one established and maintained by ourselves—we would have a perfect right to retain them until all danger from contact with others is passed.

DR. G. H. LYMAN: I should like to ask whether under the law the board of health must isolate all persons in any one special place: cannot the board isolate them in the City Hospital as well as anywhere else? What is the difference? Does the law state that a small-pox hospital shall be for and under the control of the board of health, or that the board of health shall have authority to isolate these cases. Suppose they choose to isolate them in a tent?

DR. DURGIN: In that event we should do precisely as we do in a dwelling house. We place our own officers there. They are our agents and have the right. We cannot make Dr. Rowe an agent of the board of health. We could go there personally if we had the right to retain a patient as in a dwelling-house or in a tent. I give an unprofessional opinion in the matter. It is purely a legal question, which I don't wish to stand in the light of a lawyer in answering.

DR. H. OSGOOD: When a patient leaves the hospital after having been confined a few days, it seems logical to suppose he is in a worse condition than when he enters, and consequently the patient is less protected than when first sent to the hospital, as we will suppose, by the board of health. I would like to ask Dr. Durgin if this society as a body could not present a memorial to any authority, either to the city or the State legislature, which will give the board of health the necessary power, and, if such a memorial would be of use, to what authority should it be presented?

DR. FOWLER suggested that the work of the committee should be directed particularly to the investigating, and to conferring with regard to diphtheria, and not take in the other contagious diseases.

DR. MARION: I have been extremely interested in the papers and the discussion which has been elicited; and I feel quite unequal to saying anything of importance upon the subject, feeling as I do, that the more I see of diphtheria the less positive I am in my opinions as to its nature and everything concerning it; so uncertain am I of late that when I see a case, with reference to

diagnosis I very often say I don't know. What seems to be a case of sore throat may be a case of diphtheria. When asked how long it will last, I tell them frankly I don't know. If the child is not better within a week I think it is very serious. In ward 25, with a population of between nine and ten thousand, during October, November, and December, there were reported to the board of health seventy-four cases, I think, a very large proportion of diphtheria it seems to me, and this has been equally distributed about the ward, not being confined to any particular locality, not confined to streets where they have sewers, to houses where they have water-closets or privies wholly, where they have used well water or water from the mains. No one marked feature has been noticed except that it has been generally distributed through the ward.

With the epidemic or endemic in Brighton, there has been a large number of cases of measles running along with it in the same family.

The matter of heart failure has been referred to. It seems to me I have noticed that phenomenon more in this epidemic than ever before. With reference to heart failure in one family not reported as diphtheria, the child, as the mother told me, was choking. Upon examination, it seemed the child had faucial paralysis with enlarged glands. All the children had had sore throats, this child included. Within a week after I first saw the child I was called again, and found three of the children down with measles. This child was with the rest, came on with the same symptoms, but instead of having a good square eruption it was very pale, the pulse hardly perceptible. The child died that night in the first stage of measles. I returned it as a death of heart failure in the initial stage of measles, heart failure from paralysis due to diphtheria. In two or three other cases of measles I have noticed heart failure.

Dr. Durgin refers to the repeated attacks of diphtheria in the same individual. In this epidemic I had a rather interesting case where a child came down with diphtheria, went through the regular stage of about ten days and recovered, and a day or two following showed the first signs of measles; the measles went through its regular course, and before the child was allowed to leave the room again a membrane developed on the fauces, and I believe it also extended into the larynx, as the child entirely lost the voice and was hoarse several days, but recovered. On the repetition of diphtheria in the child, the mother also came down with diphtheria.

Another subject that Dr. Durgin has alluded to is with reference to croup. I suppose that that is, and always will be, a disputed point. I don't know that all croup is not all diphtheria; there are some cases that certainly don't get reported as diphtheria. A case that has recently happened

in the ward might illustrate what I mean. The children were all sick with measles under the care of a physician practicing sectarian medicine. This child after going through the measles was attacked with croup. The child had the operation of intubation and died within twenty-four hours; was allowed to have a public funeral, was embalmed and had a "wake." Two days after the funeral the remaining two children of the family were sent to the City Hospital by my brother. On the following day I sent the woman to take care of a child during intubation, and subsequent to that there were several cases of diphtheria, but still the first case was claimed to be a case of simon-pure croup. I fancy that oftentimes it goes that way. In connection with diphtheria it was my fortune to see several cases of diphtheria following croup; in most of these instances there was laryngeal complication, even when not coming to a fatal issue. I have an interesting case to allude to in connection with diphtheria in the puerperal state. On the 30th of November, a lady called at my office with a very severe sore throat. Being unable to make a diagnosis I gave her directions to go home and let me know if she saw anything in the throat that looked peculiar. The next night they found a very slight patch. I at once instituted the treatment for diphtheria; and the following day the fauces, soft palate, and both tonsils were covered with the characteristic exudation of diphtheria. She expected to be confined on the 5th of December. The diphtheritic process went on its regular way, and she was confined on the morning of December 5th. Everything went well. She had a very slight elevation of temperature that day; it fell back where it had been before. It did not begin excessively high— 101° or 102° , and in ten days she was convalescent, and within two weeks the fauces, I think, all cleared. The child was taken immediately from the room and in another part of the house. The child was covered with an eruption of sudamina which changed to a milky appearance and disappeared. The mother did well. When the boy was 24 days old I was called to see it, as it could not breathe through its nose. I found a characteristic discharge of thin yellow serum, and felt sure it was going to be a case of nasal diphtheria. The following day a whitish membrane had formed near the anterior opening in both nares, and three or four days after that a patch of diphtheritic membrane had formed in the roof of the baby's mouth, and extended back with just a trace on one tonsil. Further than that it did not extend, and it is still under treatment. The exudation has not disappeared from the roof of the mouth as yet. It is a complication, and when it was first presented I did not know what to think or how to act. It was one of the unusual complications.

DR. McCOLLOM, in answer to Dr. Withington's question in regard to the prevalence in the different localities of the city, presented a list of the number of cases in Boston for 1888, with the wards and relative area and the number of inhabitants: In ward one, 59 cases. That is East Boston, comprising the hill and a portion adjoining Chelsea. Population, 15,656.

Ward 1	59	15,656	Ward 14	41	22,738
" 2	16	15,700	" 15	49	16,219
" 3	16	12,328	" 16	65	16,435
" 4	28	12,518	" 17	34	14,747
" 5	26	12,827	" 18	27	14,141
" 6	119	17,244	(5) " 19	81	20,577
(6) " 7	67	12,038	(4) " 20	85	27,983
" 8	39	11,286	" 21	40	15,620
" 9	11	11,289	" 22	49	15,834
" 10	11	9,745	" 23	38	17,424
" 11	32	17,805	(3) " 24	110	21,500
" 12	31	13,845	(1) " 25	141	8,523
" 13	35	22,547			
1,411 cases. 399,597-415,000					

In Dr. Marion's ward (25) 141 cases. Population 8,523. This is a rather remarkable circumstance, because we would naturally suppose that to be the healthiest portion of Boston. A very great number of the houses are isolated, more so in ward 25 than in any other portion of the city, and yet with a population of 8,524 they have had 141 cases. In all there have been reported 1,411 cases throughout the whole city during the year, and the relative frequency is, 1st ward, 25; 2d ward, 6; 3d ward, 24; 4th ward, 20; 5th ward, 19. There is very little to be learned from the other figures, because they are so nearly alike.

A good deal has been said about isolating these cases. Of course it is of importance to isolate them, but how can it be done? We have an entirely different state of affairs in diphtheria from that which exists in smallpox. In the first place we must educate the people up to the idea that diphtheria is *contagious*, and no one more fully realizes the importance or necessity of that than I do. I hear the remarks every day that diphtheria is not contagious. "If the child had smallpox or scarlet fever we would send the child to the hospital." In some cases where the parents consent to have the child go to the hospital, the family physician comes in and says: "Oh no, you had better not send her to the hospital. The child will be better in a day or two." He can't go against the family physician. No health officers, no one, can remove a patient from any house to a hospital unless the attending physician says that the patient can be removed without injury. We cannot state that there is absolutely and positively no danger. I think very few gentlemen here would care to take a posse of police officers and remove the child from its mother to the hospital, or force the mother to go. It has been done frequently in smallpox, but the community would not sustain the board of health in so doing in cases of diphtheria. It can be done by educating the people up to that point; and through the influence of the members of this Society we can accomplish a good deal.

Take the cases in Brighton. Dr. Marion has sent many cases to the hospitals and done much good. Suppose some one else had been there who did not believe diphtheria was contagious, we might have had ten times as many cases in Brighton as there have been.

Another thing, a good many of these cases are not reported until after the patient's death. It is a common thing for a patient to die, and the first report we get of the case is the death certificate. The patient may have had a physician and the physician told them the child had "sore throat," which is not reported.

It is desirable to have some place where we can send the children who are well, so that they may be watched, and the moment they come down with the disease be sent to the hospital.

As to the question of diagnosis: it is difficult in the first twenty-four hours to say absolutely, "It is diphtheria." We can advise cases to go to the hospital, but when making a forcible removal we must be *sure*. Mild cases are very apt to give rise to trouble, and the same thing is true of all contagious diseases, that the mild cases are very much more dangerous to the public health than the severe cases, because they go round everywhere and spread the disease almost indefinitely. These are some of the difficulties with which we have to contend, and for that reason I have spoken at length about them, because it is important that we take hold of the matter understandingly and see if there is not some way we can stamp out the epidemic to a certain extent.

I have seen quite a number of cases where people have had undoubted attacks of diphtheria a second and even a third time. I have in mind a case where an epidemic went through a whole family; three died and two lived, and since then there have been two attacks of unmistakable diphtheria. So far as hearsay evidence is concerned, we are constantly running across such cases. If a patient can have diphtheria three or four times we must be on our guard more than if they had the disease once in a lifetime.

DR. H. E. MARION presented the specimen of a cast of trachea which he took from a child in 1871, thinking it a case of croup.

DR. FARLOW: As an additional means of preventing the spread of diphtheria it seems to me there is something we can do toward the well children of the family. Diphtheria is a disease much more common in children than in adults. Children are subject to nasal catarrh, etc., consequently they are much more liable to the absorption of germs; so that if there is a contagious disease in the family, I think it is incumbent on the family physician to institute preventive measures, to see if there is any catarrh about the gums, or tonsils in particular, and if so, some alkaline douche should be used. Where there is a suspicion of diphtheria I think the children

should be rigorously inspected. I don't think a physician does his duty who comes into a house, gives a doubtful diagnosis, and says: "Wait two or three days," without instituting some preventive means with regard to the other children; and it seems to me that the prevention is much more important than the cure, although of course, the cure is the thing the family look for. If we can prevent the disease by keeping the throat in a healthy condition we are doing very much more than most physicians are doing now. It is what we should endeavor to accomplish.

DR. G. B. SHATTUCK: Dr. McCollom's remarks with reference to the doubtful cases represent another difficulty—that you can't send these cases to the diphtheria ward of the hospital any more than doubtful cases of small-pox to the small-pox hospital. In cases of sore throat the question comes up, "Is this patient to remain here or be transferred to the diphtheria ward?" Of course, if you send a case of tonsillitis, mild sore throat, to the hospital, and the patient develops diphtheria, it may indicate that your diagnosis is correct, or it may expose you to a suit.

DR. A. N. BLODGETT: In relation to the question of the recurrence of diphtheria I have had one or two cases sufficiently marked to convince me that recurrence of that disease is more frequent than generally supposed. I treated a case of diphtheria, in a young man 20 years of age, in which there was a moderate exudation in the throat of unmistakable character, followed by paresis of almost all the voluntary muscles, so that the limbs were powerless, speech was seriously interfered with, the patient could not move himself in bed, and was absolutely helpless for a period of two or three weeks. From this he gradually recovered, requiring no less than nine months for restoration of strength and vigor. About eighteen months afterward, he was prostrated by another distinct and unmistakable attack of diphtheria: the pharyngeal exudation was distinct and unmistakable, but there was no affection of the nervous system of the kind which occurred from the first case. The two attacks were treated by careful isolation, disinfection, the use of bichloride of mercury, and tincture of the chloride of iron, together with strychnine and other tonics. The patient recovered:

DR. A. L. MASON, in closing the discussion, said: In making these informal remarks about diphtheria I did not wish to convey the impression that the mortality rate seemed to me excessive in the City Hospital. It seems to me the wards are doing their work very well, and I should think would tend to diminish the amount of grave diphtheria that exists in the city. The object of a resolution of this kind is to aid the Board of Health in all its efforts. I am sure all of us are obliged to Dr. Durgin, Dr. McCullom and Dr. Marion for coming this evening and giving us so

much valuable information with regard to the course of this epidemic.

Of course the mortality rate at the City Hospital is made much larger from the number of moribund cases which enter; but the rate of mortality cannot be regarded as excessively high, I think, as compared with statistics from other countries.

DR. LYMAN then presented the following resolution, which was read by the Secretary:

Resolved: That a committee of three be appointed by the Chair to confer with the Board of Health as to the desirability of further measures to limit the spread of diphtheria in Boston. The resolution was adopted.

The Chair appointed Drs. G. H. Lyman, G. B. Shattuck, C. F. Folsom, as that committee.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

THE PARIS SCHOOL OF MEDICINE. II.

There is only one university in France, one degree, that of Doctor of Medicine, which is conferred by various faculties already named. There is one system of hospitals, all alike open to the student for his one fee. The degrees of Doctor of Surgery and Doctor of Medical Science, may be considered practically obsolete, as one thinks of taking them. Medical teaching in Paris may be divided under the heads of the theoretical teaching given at the Schools of Medicine, and of the hospital teaching which comprehends clinical courses associated with clinical experience. The immense majority of French and foreign students in Paris follow both the official courses of the Faculty and the gratuitous courses given by the physicians or surgeons of the hospitals and unattached teachers. In his third year every student is obliged to attend the hospital regularly, as "stugiaire," or "externe," or "interne." The stugiaires are students following their curriculum, and are divided among the different series of services, medicine, surgery, and midwifery, according to their choice, and must follow the visits of the medical officers during two years, with power to pass from one hospital to the other, but under the obligation to furnish certificates of attendance at the hospitals during 300 days in each year. Students who desire to undertake hospital studies apart from the obligatory curriculum, can attend any of the hospitals under the title of "bénévoles," that is to say, they are not called upon to pay any fee, and they can attend at their pleasure. This privilege is enormously valuable to foreign students. Foreigners are admitted to competition for the "internat" and the "externat." The office of externe or interne can only be obtained

by competitive examinations, and that of interne lasts for four years, and is the stepping-stone to further higher nominations, such as Chefs de Service, and hospital physicians or surgeons. The medical cliniques of the Faculty are four in number. For clinical medicine we have Professors Germain Sée at the Hôtel Dieu, Jaccoud at the Pitié, Potain at the Charité, and Peter at the Necker Hospital. For clinical surgery, we have Professors Richet at the Hôtel Dieu, Verneuil at the Pitié, Trélat at the Charité, and Le Fort at the Necker. Besides these official cliniques there are a certain number of physicians and surgeons in the hospitals whose voluntary courses are followed. Among these may be mentioned those of Drs. Tillaux at the Hôtel Dieu, Péan at Saint Louis, Labbé at Beaujon, in surgery; and in therapeutics, those of Drs. Dujardin-Beaumetz at Cochin, Huchard at Bichat, and Jules Simon at the Hôpital des Enfants Malades. Foreign students and practitioners who come to Paris to supplement or complete their studies, the whole of the resources of the Faculty of Paris and that of the hospitals are open to them, and those who wish to give themselves up to some specialty have ample opportunities for doing so. Those who wish to study the diseases of the skin will find at the Hôpital Saint Louis unrivalled material. The official course is delivered by Dr. Tourmer, the celebrated syphilographer. For nervous diseases we have Professor Charcot at Salpêtrière, for mental disease, the official course of Professor Ball and the clinique of Dr. Magnan at the Saint Anne Asylum. For diseases of the eyes there is the official clinique of Professor Panas at the Hôtel Dieu. There are a great number of cliniques carried on by unattached medical men, who do not form part of the medical corps of the hospitals which the students can follow without being required to pay any fee. These are conducted by Drs. Landolt, Galezowski, and de Wecker, for ophthalmological study, which is also treated of at the hospitals of the Quinze-Vingts. In the study of pathological anatomy may be noted the necropsies of the clinical service of Professor Germain Sée, which are performed at the Hôtel Dieu by Professor Cornil. The teaching of legal medicine, from a theoretical point of view, is carried on at the Faculty, while the practical part of the same branch is carried on at the morgue, both under the direction of Dr. Brouardel, Professor of Forensic Medicine, and Dean of the Faculty. Venereal diseases are especially studied at the Hôpital du Mide for men, and at Lourcine for women. For diseases of the throat there are special consultations held at the Lariboisière by Dr. Gougenheim. For diseases of the ear there are the institutions for the deaf and dumb, at the consultations of which all foreign students are admitted. For accouchments the Clinique of the Faculty, and the maternités of the hospitals, di-

rected by Professor Tarnier at the former, Drs. Budin and Pinard at the Lariboisière and the Charité, respectively. One of the most important special cliniques is that conducted by Professor Guyon, at the Necker Hospital, for diseases of the urinary organs. All foreign practitioners or students can attend without payment all the cliniques and all the visits of the Professors, and obtain all the information that they desire. They can also by moderate payments obtain private courses of lessons, either from the Internes or from the Chefs de Clinique, at their evening visits at the hospitals. The extensive and important laboratories of MM. Ranvier, Brown-Séquard, Marey, Dastre, etc., at the College of France, are also open to all native and foreign students. Candidates for the office of physician, surgeon, or obstetric officer at the hospitals, are admitted to "concours" on producing evidence of being natives of France, or naturalized, and of having had the degree of Doctor of Medicine for two years, at least. They have to undergo a written and oral examination on the various branches of medicine and surgery. The post of Assistant Professor, or Agrigi, is also filled up after competitive examination.

Dr. Legouest, the well-known military surgeon, died on the 5th inst., at his residence in Paris, in the 69th year of his age. He was Inspector-General of hospitals, and former President of the Council of Health of the Army. He was also Professor of clinical surgery at Val-de-Grâce, and was raised to the dignity of Commander of the Legion of Honor in recognition of his valuable services. He was a member of the Academy of the Medicine since 1867, in the Section of Surgical Pathology. He was President of the Academy in 1881. He was the author of several important works, of which the following may be selected from among them. Besides his thesis for the doctorate in 1845, he published a memoir entitled: *Kystes symviaux du poignet*, in 1857; *La Chirurgie Militaire Contemporaine*, in 1859; *Une Conférence sur le service de Santé*, in campagne 1868; *Le Service de Santé des Armées Americaines pendant la guerre des Etats Unis de 1861 à 1866*; *Etude sur la salubrité des hôpitaux militaires de Paris*, in 1864; *Traité de Chirurgie d'Armée*, in 1872.

A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM CINCINNATI.

(FROM OUR OWN CORRESPONDENT.)

Commencement Exercises at the Medical and Dental Colleges—Cincinnati Academy of Medicine.

The Cincinnati College of Pharmacy held its seventeenth annual Commencement at Musik Verein Hall on the evening of March 14. After the exercises the usual banquet was given. There

were eighteen graduates from the College of Pharmacy this year.

The Commencement exercises of the Cincinnati College of Medicine and Surgery were held in the Scottish Rite Cathedral February 26, where they graduated thirty-two Doctors of Medicine. This is the largest class to leave this institution for some years. Dr. R. C. Stockton Reed made the address of the Dean, and the valedictory address was given by Dr. C. A. L. Reed.

The Commencement of the Ohio College of Dental Surgery was largely attended at College Hall on the evening of March 4. Sixty-five Doctors of Dental Surgery were graduated. The address was made and degrees conferred by Dr. C. R. Taft, as Dr. George W. Keeley, President of the Board of Trustees, had died within the last year. The address to the students was delivered by Mr. E. D. Warfield, the oration by H. M. Paxton. Prof. H. A. Smith, Dean of the Faculty, awarded the prizes, and the exercises were followed by a banquet at the Burnet House for the graduates, faculty and alumni.

The Miami Medical College, at its Commencement at the Odeon the evening of the 6th of March, graduated a class of twenty-two. The remarks by the Dean, Dr. Wm. H. Taylor, were followed by an address from Hon. W. H. McGuffey, President of the Board of Trustees. The valedictory address was delivered by Dr. Byron Stanton, Professor of Gynecology. Dr. Stanton discussed the care of the public health, which field is in his line as Health Officer of the city. The Faculty Prize, \$100 in gold, was awarded Dr. H. E. McVey, of Mt. Blanchard, O. The largest and most enthusiastic meeting of the alumni for some time was held at the Burnet House, where a very enjoyable banquet was given. The Association elected as President, Dr. L. M. Buchwalter; Secretary, Dr. J. C. Oliver. The retiring President, Dr. W. C. Chapman, of Toledo, made a very interesting valedictory address. Dr. Dan. Millikin, of Hamilton, was an excellent toastmaster, and the responses to the various toasts were made in the happiest vein. Two members of the Association were expelled for advertising.

At the seventieth annual Commencement of the Medical College of Ohio eighty-six Doctors of Medicine were graduated. This was held in the Odeon March 7. Dr. W. W. Seely made some short, pointed remarks as Dean of the Faculty. He was followed by the address of the President of the Board of Trustees, Hon. Wm. H. Dickson, who delivered the diplomas. This speaker paid his respects to the neglect of the duties of the politician by physicians. His interesting address urged more attention to the affairs of the country by doctors and the assumption of an active part therein. The Faculty Prize for the best final examination in all departments was captured by Dr. Erwin O. Straehley, of Cincinnati. Dr. For-

cheimer, Professor of Physiology and Diseases of Children, delivered the valedictory address, advocating his subject, "Specialism in Medicine," with many good arguments.

The alumni of the Medical College of Ohio met at Memorial Hall the afternoon of March 7. An address was made by the President, Dr. S. J. Spees, of Hillsboro, Ohio. "Politics and the Doctor" was the subject of the annual address, delivered by Dr. Miles F. Porter, of Fort Wayne, Ind. The matter of the publication of the early history of the College from 1819 to the present was placed in the hands of a committee.

At a recent meeting of the Academy a report was made by a gentleman on the radical cure of hernia. His paper was very able and was listened to with close attention. At the end he wished to show three male patients on whom he had operated successfully. Two lady members of the Academy were present and the men positively refused to exhibit unless the ladies absented themselves. The President descended from his chair and asked the ladies to be kind enough to retire, which they did. The patients then took their stand on the rostrum and were inspected by all present who wished to do so. At the next meeting one of the ladies, having taken offense at being deprived of her inalienable rights, immediately after the reading of the minutes demanded an explanation of why she had been excluded from a part of the previous meeting. The President tried to satisfy the lady M.D. with an evasive answer which was rendered all the more transparent by the diffidence with which it was given. The lady asked with renewed emphasis why she was requested to withdraw, and still remained unsatisfied when the President told her that the men refused to exhibit themselves unless the ladies were absent.

MC. K.

Commencement Exercises of the Chicago Medical College, Medical Department of the Northwestern University.

Mr. Editor:—While attending the Thirtieth Annual Commencement Exercises of the above-named college, on the 26th of March, 1889, I noted the following items that will be of more or less interest to your readers in all parts of the country. The college was organized on the basis of a strictly graded system of medical education, and requires a fair standard of preliminary education for admission, three full years of medical study, including three annual courses of medical college instruction of not less than six months each, with laboratory and hospital clinical attendance two college courses. During the college year just closed the classes in attendance numbered as follows: 1st year class 79; 2d year class 52; 3d year class 51; making a total of 182. After music, and the opening prayer by Rev.

Joseph Cummings, D.D., L.L.D., President of the University, the Dean of the medical faculty announced the awarding of the following prizes :

The Fowler Prize, being a case of test lenses worth \$100, given by E. S. & W. S. Fowler, of Chicago, to that student of the Chicago Medical College who at the close of this session shows the most proficiency in theoretical and practical optics, was awarded, after careful examination, to Carleton Montville Balfour, of Kansas.

The Fuller Prize, of \$25, for the best graduating thesis on Puerperal Fever was divided. Of the competitors two show such equal merit that the committee concluded to divide the prize and give one-half to Abraham Lincoln Blesh, of Kansas, and one-half to E. J. Boeseke, of California.

A prize, consisting of a case of amputating instruments, offered by Dr. A. J. Coey to the member of the Clinical Class in Mercy Hospital who should write the best thesis on the Differential Diagnosis of Injuries of the Hip-joint, was awarded by the proper committee to E. J. Boeseke, of California.

The Faculty Prize for the best thesis has been awarded to the author of the thesis on the "Etiology, Pathology and Treatment of Thermic Fever," Francis William McNamara, of Illinois. This thesis is not only well written but it also contains the results of some important original investigations. The theses of Pierrepont Isham Prentice, George William Harkins, Daniel Webster Eiss, and James Perry Houston, are also worthy of special commendation.

Ingals Prize.—Two years since, Dr. Ephraim Ingals, well known as one of the older and most highly esteemed physicians of this city, wishing to encourage a higher standard of general education and mental discipline for students of medicine, instituted a prize of \$100, to be awarded to the member of the graduating class in this College who should attain the highest average standing in literature, science and medicine; the same to be determined by a committee of the medical faculty. One year since, in furtherance of the same object, Dr. Geo. Wheeler Jones, of Danville, Ill., offered a prize of \$50, to be awarded to the member of the graduating class of 1889 who attained the second position in the contest for the Ingals prize. The committee having charge of the examination for these prizes required the same to be conducted in writing, and to include, under the head of *Literature*, English composition, rhetoric, logic, history, and English literature; under *Science*, algebra, physics, botany, natural history, and the topography and geology of the United States; and under *Medicine*, all the branches of medicine and surgery included in the curriculum of the medical college. All who entered the contest were graduates of literary colleges or universities, some in the East and some in the West. After careful

comparison of the results of the examination the committee unanimously awarded the Ingals Prize of \$100 to James Perry Houston, of Ohio, and the Jones Prize of \$50 to Leonard Lawshe Skelton, of Illinois,

In formally presenting the graduating class to the President of the University for the degree of Doctor of Medicine, the Dean of the medical faculty gave the following interesting items of their collegiate history :

The class entered the College as first year students in 1886, numbering 53, and were examined at the close of that college year in all the branches of the first year course. Only 37 of the number returned for the second year course, 16 having been lost; but 10 new students coming from other colleges were admitted by examination for advanced standing, making the number for the second year 47. Of this number 43 returned for the third year course, 4 only having been lost. To these 8 who had spent two years in other medical colleges were admitted by examination for advanced standing, making the whole number in the third year class 51. Of these 46 were presented by the President of the University, as having complied with all the requirements of the College and passed satisfactorily all examinations, for the degree of Doctor of Medicine. Of this number 18, or a fraction less than 40 per cent., were regular graduates of literary and scientific colleges, and the remaining 28 had pursued academic and collegiate studies from one to five years before commencing the study of medicine.

The whole number of matriculates in the College this year being 182, it will be seen that the ratio of graduates to matriculates is only a fraction over 25 per cent. Such is the result of a rigidly graded and faithfully executed three years course of medical studies.

S. M.

MISCELLANY.

STATE MEDICAL SOCIETY OF TENNESSEE.—This Society will meet in annual session at Nashville, April 30, and continue in session three days. Tickets to Nashville can be bought at that time in all the Southern States at one fare for the round trip, good for ten or more days. G. C. Savage, M.D., Chairman Com. of Arrangements.

SEVENTH DECENNIAL CONVENTION FOR REVISING THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA.—Notice is hereby given that, in accordance with and by virtue of the authority vested in me by the Convention of 1880, I hereby call upon the several incorporated Medical Societies, incorporated Medical Colleges, incorporated Colleges of Pharmacy, and incorporated Pharmaceutical Societies throughout the United States of America, the American Medical Association, and the American Pharmaceutical Association, to elect a number of delegates, not exceeding *three*, and upon the Surgeon-General of the Army, Surgeon-General of the Navy, and the Surgeon-General of the Marine-Hospital Service, to appoint, each, not exceeding *three* medical officers to at-

tend a General Convention for the Revision and Publication of the Pharmacopœia of the United States of America, to assemble in the city of Washington, D. C., on the first Wednesday of May, 1890 (May 7th), at twelve o'clock noon.

The several bodies, as well as the Medical Departments of the Army, Navy, and Marine-Hospital Service, are hereby requested to submit the Pharmacopœia to a careful revision and to transmit the result of their labors to the Committee of Revision at least three months before the meeting of the General Convention.

The several medical and pharmaceutical bodies are hereby requested to transmit to me, as the President of the Convention of 1880, the names and residences of their respective delegates, as soon as they shall have been appointed; a list of these delegates shall thereupon be published under my authority, for the information of the medical public, in the newspapers and medical journals in the month of March, 1890.

In the event of the death, resignation or inability of the President of the Convention of 1880 to act, these duties (in accordance with the resolution of that Convention) shall devolve, successively, in the following order of precedence: upon the Vice-Presidents, the Secretary, the Asst. Secretary, and the Chairman of the Committee of Revision and Publication of the Pharmacopœia.

These officers are as follows: First Vice-President, Samuel C. Busey, M.D., of Washington, D. C.; Second Vice-President, P. W. Bedford, Ph.G., of New York; Secretary, Frederick A. Castle, M.D., of New York; Assistant Secretary, C. H. A. Kleinschmidt, M.D., of Washington, D. C.; Chairman of Committee of Revision, Charles Rice, Ph.D., of New York; First Vice-Chairman of the Committee of Revision, Joseph P. Remington, Ph.D., of Philadelphia, Pa.; Second Vice-Chairman of the Committee of Revision, C. Lewis Diehl, Ph.G., of Louisville, Ky.

At the General Convention held in Washington, D. C., on the fifth day of May, 1880, the organizations and bodies enumerated in the Abstract of the Proceedings of the National Convention of 1880, on pp. xv. to xviii of the U. S. Pharmacopœia of 1882—a list of which will be found appended to this call—were recognized as being entitled to representation.

If any body other than those admitted in 1880 shall desire a representation in the Convention of 1890, it is suggested that the proof of incorporation, signed by the Secretary of State, of the State which shall have issued the charter, or by properly qualified public officials of the United States, be presented with the credentials of the delegation.

A blank form of certificate of appointment of delegates will be sent upon application by letter to my address, care of Dr. Edwin H. Brigham, Assistant Librarian of the Boston Medical Library, 19 Boylston Place, Boston, Mass. (Signed)

ROBERT AMORY, Pres't of the Convention of 1880.
Boston, March 9, 1889.

LETTERS RECEIVED.

Dr. John P. Stoddard, Muskegon, Mich.; Dr. Wm. B. Canfield, Baltimore, Md.; Dr. J. H. Fiegenbaum, Alton, Ill.; J. J. Kindred, Louisville, Ky.; Dr. J. T. Cron, Carrollton, Ill.; E. W. Woodruff, Black Lick, O.; Parke, Davis & Co., Detroit, Mich.; Dr. G. C. Savage, Nashville, Tenn.; Dr. A. L. Hummel, Philadelphia; Dr. Willis P. King, Kansas City, Mo.; Dr. John I. Miller, Wellston, Mo.; Dr. Leonard St. John, Chicago; Plimpton Mfg. Co., Hartford, Conn.; I. Haldenstein, New York; New York & Chicago Chemical Co., New York; Thos. Leeming & Co., New York; American Advertising Agency, Cincinnati, O.; Dr. Russell Bayly, New York; Dr. Willard Streetman, Sweetwater, Tex.; Dr. M. W. White, Sioux City, Ia.; Miss Maggie Kennedy, Carterville, Illinois; Eisner & Mendelson Co., New York; A. E. Walesby, O.

Stubville, Louisville, Ky.; J. Walter Thompson, New York; Clark Bell, New York; Dr. E. Fletcher Ingals, Chicago; Dr. R. J. Dunglison, Philadelphia; J. S. Dorsey, Baltimore, Md.; F. T. McFadden, New York; Longmans, Green & Co., New York; Dr. S. B. W. McLeod, New York; Walter Baker & Co., Boston; Boston Gynecological Society; Cincinnati Polyclinic; Dr. Hamline, Marysville, Cal.; A. M. McLaurie, New York; Ward Bros., Jacksonville, Ill.; Dr. J. W. Park, Williamstown, Pa.; Dr. Charles F. Disen, Seattle, W. T.; J. B. Imhoff, Chester, Pa.; Dr. W. H. Keller, Jersey City, N. J.; Dr. Emil Pfeiffer, Wiesbaden; M. Goltman, Montreal, Can.; Thos. S. Blair, Ann Arbor, Mich.; Dr. G. W. Galloway, Findlay, O.; D. Kimball, Chicago; Nugent, Brown & Co., Fargo, Dak.; Provident Chemical Works, St. Louis; Lambert Pharmaceutical Co., St. Louis; Wm. Burnett, Montreal, Can.; Dr. Moreau R. Brown, Chicago; Eisner & Mendelson Co., New York; J. H. Basinger, Louisville, Ky.; L. Victoria Hampton, Portland, Oregon; Union Pacific Railway Co., Omaha, Neb.; Dr. Richard J. Dunglison, Philadelphia; Henry Bernd & Co., St. Louis; Dr. H. B. Ransom, Chicago; New York Pharmaceutical Co., Bedford Springs, Mass.; Dr. L. Duncan Bulkley, New York; James Pyle & Sons, New York; Dr. G. W. Hubbard, Nashville, Tenn.; Dr. P. R. Burns, Nashville, Tenn.; Dr. J. S. Cameron, Wichita, Kan.; Dr. S. W. Crosthwaite, Nashville, Tenn.; Dr. J. W. Dickson, Orangeburg, S. C.; Dr. J. F. Dyson, Nashville, Tenn.; Dr. O. W. James, Chattanooga, Tenn.; Dr. J. J. Masy, Paducah, Ky.; Dr. C. McCarthy, Macon, Ga.; Dr. G. Phipps, Nashville, Tenn.; Dr. H. L. Phipps, Navassota, Tex.; Dr. J. M. Thompson, Birmingham, Ala.; Dr. R. S. White, Nashville, Tenn.; P. W. Garfield, Cleveland, O.; Rio Chemical Co., St. Louis; J. Walter Thompson, New York; E. A. Smith, Burlington, Vt.; Dr. A. E. Baldwin, Chicago; Dr. N. S. Craig, Brookhaven, Miss.; Wm. J. Dornan, Philadelphia; W. B. Clark, Baltimore, Md.; Dr. J. A. Robison, Chicago; Dr. W. C. Coombs, Wichita, Kan.; E. Merk, New York.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 23, 1889, to March 29, 1889.

Asst. Surgeon Richards Barnett, U. S. Army, died March 27, 1889, at Ft. Riley, Kan.

Capt. Louis M. Maus, Asst. Surgeon (Ft. Schuyler, N. Y. H.) will proceed to Camp S. B. Luce, Fisher's Island, N. Y., with battery "K," 5 U. S. Artillery, and report to the camp commander for a tour of rifle practice. Par. 10, S. O. 158, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, August 2, 1889.

Atlanta Bks., Ga. Established by G. O. 28, A. G. O., March 21, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending March 30, 1889.

Asst. Surgeon Thos. A. Berryhill, detached from Naval Academy, Annapolis, Md., and to the Naval Hospital, New York.

P. A. Surgeon A. C. Heffenger, ordered to appear before the retiring board, Washington, D. C.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Four Weeks Ending March 23, 1889.

Asst. Surgeon G. M. Magruder, to report to the Supervising Surgeon-General in person for temporary duty. March 1 and 23, 1889.

Asst. Surgeon J. J. Kinyoun, relieved from duty at Baltimore, Md., to rejoin station at New York, N. Y., March 18, 1889.

Asst. Surgeon J. C. Perry, commissioned by the President, March 21, 1889. Ordered to Marine Hospital, Mobile, Ala., for temporary duty. March 22, 1889.

Asst. Surgeon A. C. Smith, commissioned by the President, March 21, 1889. Ordered to Marine Hospital, Louisville, Ky. March 22, 1889. Temporary duty.

THE

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, APRIL 13, 1889.

No. 15.

ORIGINAL ARTICLES.

THE USE OF ELECTRICITY IN THE TREATMENT OF DISEASES OF THE FEMALE PELVIC ORGANS.

*Read before the Medical Society of the District of Columbia,
December 19, 1888.*

BY J. WESLEY BOVEE, M.D.,
OF WASHINGTON, D. C.

Electricity is not unlike all other things in medicine, as regards its invariable tendency to do good even when applied under the most favorable conditions and in the most careful manner. Yet, a great deal of good can be done with it when it is wisely used. It has, I think, been used in medicine about sixty-five or seventy years, and during that period nearly all diseases have been subjected more or less to its influence—usually without any regard to system and frequently without any evidence of reason. This is probably due to the lack of knowledge as to its method of influencing living tissues. During the last few years it has received more attention from scientific men, and its effect upon the human system has been quite thoroughly investigated. The conditions in which it is likely to prove valuable as a means of treatment, have, to a great extent, been classified. For about three years it has been carefully studied in relation with female pelvic troubles, such as fibroid tumors, inflammatory deposits of long-standing, subinvolution and ovarian neuralgia.

The treatment of extra-uterine pregnancy in its first few months has probably become the greatest field for it, inasmuch as many so-called cases have, in this country, been reported cured by it, and the majority of prominent gynecologists of this country prefer its application to the use of the knife during the first five or six months of this condition. No uniform rules are followed in its application to erratic gestation, some preferring the faradic current, but most advocating the galvanic—claiming it is less liable to produce rupture of the gestation sac. But few of these cases have, I think, been positively diagnosed, and I believe in but two or three cases in which electricity has been used for this unfortunate condition, have the products of conception

actually been seen. I saw one of these, and assisted in removing, per vaginam, a five months' foetus from Douglas' cul-de-sac. The reporter of the case claimed to have diagnosed the condition during the thirteenth week, and began applying the galvanic current. This was continued about three weeks, and the extra-uterine growth continued to increase in size after the use of the galvanic current was discontinued. It is interesting to know that electricity was passed through the pelvic organs two or three times during the month, just after the last menstrual period. I can hardly attribute the death of this foetus after the end of the fifth month to the use of the galvanic current between the twelfth and the fifteenth week.

Great claims are being presented for the efficacy of the galvanic current in dispersing fibroid tumors of the uterus. Particularly is it advocated in this class of cases by Apostoli, Keith, Newman, Freeman, Engelmann and Cutler. Its value in this direction is, I believe, overrated.

In two cases that I had diagnosed uterine fibroids, the growths disappeared after several applications of the electric current. One of these was, as I thought, a fibroid of about one and one-half inches in diameter, situated in the posterior wall of the uterus. The woman's general health was bad, but rapidly improved while using a mild galvanic current twelve times in four weeks. At the expiration of the time mentioned, the uterus had become perfectly normal. My diagnosis was made the first time I saw her, and three subsequent examinations did not lead me to doubt the correctness of it.

The other case was multiple fibroids of the uterus and very troublesome. In this case I used the faradic current to relieve pelvic symptoms. These tumors also disappeared. I believe, however, the electric current was not the real factor in their removal, inasmuch as such growths frequently disappear without any treatment whatever. The other case, I now believe, to have been incorrectly diagnosed, that no tumor existed, and that something else was the enlargement I felt—possibly a hypertrophic thickening of the posterior wall of the uterus. My reason for thinking I erred in the diagnosis is that I

have treated with galvanism quite a number of patients suffering with uterine fibroids of various sizes, shapes, locations, etc., the treatment in most of them being diligently pursued for some months, and in none of them, except the above mentioned, did I notice any diminution in the size of the growth during the treatment. One of the two cases cited was one of the first subjected to this kind of treatment, and I was then too enthusiastic in the work to pause for impartial reasoning or to think I might be wrong.

At any rate, I cannot see what reason the advocates of "electrolysis of fibroids" have for so terming the electric action they describe. Certainly no breaking up of the chemical constituents of the growths occur, except, perhaps, some simple salt like sodium chloride is decomposed. But the albumenoids and other complex proximate principles are not broken up, consequently electrolysis does not occur.

Even if it does take place at the poles chemical change does not extend any appreciable distance into the growth. In hard fibroids of from nine to twelve inches in diameter, I cannot conceive how any electrolytic action can take place throughout the tumor, without irreparable damage to the delicate adjacent tissues. How can a current so powerful be confined to the growth when the surrounding more delicate tissue has so much greater conductivity.

The galvanic current has been used considerably in the treatment of inflammatory deposits about the uterus, punctures having been made and powerful currents used as in the treatment of fibroids. I believe mild currents, if applied oftener and longer, both in duration of application and period of treatment, will prove more serviceable. This has been the plan of treatment of the cases related in this paper.

The profession, in general, has not shown much ambition in the treatment of acute inflammations with electricity. I have frequently used it in decidedly acute inflammations, and even in the first stage with most excellent effect. I was pleased by a short article on that subject by Dr. E. H. Grandin, of New York, that appeared in an August number of the *Medical Record*, (Vide vol. xxxiv, 204, 1888.) My limited experience is in accord with that of Dr. Grandin. I think the electric current, either the galvanic or the faradic may many times be wisely substituted for the knife in diseases of the ovaries and oviducts. Mr. Lawson Tait, basing his opinion upon a few cases that came to him for operation after having been treated by electricity (no description of this treatment being offered), denounces strongly, the application of electricity for such cases, (Vide *Medical Record*, N. Y., 1888, xxxiv, 553.) I do not believe that had Mr. Tait given electricity a fair trial in his own practice he would have yet reported his second thousand of consecutive ab-

dominal sections. He has become so expert in abdominal surgery that I doubt his allowing this form of treatment to be superseded by any other, without great reluctance.

I have had a few cases in which the action of the continued galvanic as well as the faradic current has been positively intolerable. The history of one of them appears in this paper (case No. 8).

Certainly case No. 7 was far more nervous than this patient, yet the effect was so decidedly opposite to the result in No. 8.

There is a class of cases that cannot tolerate the application of electricity—not even the amount of electro-motive force just sufficient to overcome the resistance of the tissues through which it passes. I am unable to see anything about these patients that could, in any respect account for the intolerance of the current. It is probably an idiosyncrasy that will only be known after attempts to apply the current have been made. The batteries I have used were made by Waite & Bartlett, of New York, and have been faithfully cared for. I have usually applied the galvanic current just strong enough to be not uncomfortable to the patient. Each séance usually lasted from fifteen to thirty minutes, and usually repeated on alternate days, but occasionally, applications were made every day. The treatment was usually supplemented by taponnement with small woolen pledgets that were left *in situ* until just before the patient was to return for another treatment. The galvanic current was used in every case, and occasionally the faradic current was employed for its tonic effect, and for the relief of pain. It was usually successful in both of these, and its salutary effect upon constipation was occasionally noticed. I append the histories of a few cases, mostly chronic, pelvic inflammations showing the effect of the mild, galvanic current.

Case 1.—Mrs. W., æt. 31 years; widow; has three children, the youngest being 3 years old. Last confinement severe—finally delivered instrumentally. Has been an invalid since that event, cannot walk one block; suffers very much with pain in "bottom of stomach"—constant fear her "insides" will fall out; constipated; has continuous discharge from bowels. Menses regular and profuse; appetite poor; general condition bad. I first saw her when she came to my office in a carriage, July 29, last.

An examination revealed perineum torn almost into bowel, and a glairy discharge from rectum. The uterus was very low, considerably enlarged, and firmly retained in a retroverted position by the dense and thick adhesions from a former cellulitis. The cervix uteri was deeply lacerated bilaterally. I applied the galvanic current for twenty minutes, placing the positive pole against the roof of the vagina and the negative on the abdominal wall just a little above the symphysis

pubis, and applied a few woollen pledgets against the retroverted fundus uteri for gradual pressure. I also gave her the following: *R. Tr. nucis. vomicæ, tr. belladon. āā* ʒss. m. et. sig. 15 drops t.i.d. in water. This treatment was continued quite regularly three times a week, until October 9, when the pelvic deposit having been entirely absorbed, the uterus in good position, and the patient's general condition much improved, I operated for the perineal and cervical tears. The union was complete in both localities, and three weeks later, she resumed her household duties. November 25, I examined this patient, and found the pelvic organs in a perfectly healthy condition. A Simpson sound passed into uterus three inches. She said she had gained thirty pounds in weight since August 1, last, notwithstanding the two operations she underwent in the meantime.

Case 2.—Mrs. H., white, æt. 32 years; came to me September 31, last, and gave the following history: At the age of 20 years she married and had two children, both of which are now living. Her husband died six years later. During one of her confinements the cervix uteri was torn, and she had womb trouble following it. During her widowhood she was operated upon for the laceration, and was married again about two years ago. She felt well until last spring, when she had an abortion produced, and was in bed about three weeks following it. The doctor told her she nearly died from fever. Has not felt well since, is thin, delicate and nervous; suffers with profuse menstrual flow every three weeks, and constant bearing-down pain with headache. After walking a short distance she is obliged to lie down. An examination revealed the uterus retroverted and bound down by a firm pelvic exudate on every side. The sound passed three inches, the cervix tender, considerable catarrhal discharge was seen oozing from its canal. Applied a solution of silver nitrate (20 grains to ʒj) to cervical canal and dry wool tamponade to posterior fornix vaginæ. Two days later she returned, and I began a course of treatment by the galvanic current, as in case 1, extending the séance to thirty minutes and applying the wool as before. October 16, made the seventh application.

I succeeded in replacing the uterus, which has no tenderness nor catarrhal discharge. Patient states she has gained six pounds since her first visit, and feels comparatively good. November 4 to 6, menstruated—no pain and normal quantity. Treatment continued until November 16, when it was discontinued. The uterus was then in normal position, sound passed two and three-fourth inches, and no pelvic adhesions can be found. She feels perfectly well.

Case 3.—Mrs. H., white, æt. 34 years; married. I was called to see her June 28, last, and found her

suffering with a large pelvic abscess to the left of and behind the uterus, reaching up into left inguinal region. She had been married twelve years and had three children. Since the birth of the last child, she has had three abortions. Since her last confinement, six years ago, she has suffered with womb trouble; menstruation occurred in latter April, but she did not think she was pregnant again, as no symptom as in former pregnancies was present, except nervousness. She was taken with severe pelvic pains with hæmorrhage from the uterus on the 17th of June. This began without warning a short time after coming in from a drive behind a fractious horse that afternoon. The pains continued until near morning, when her doctor said she passed something that she now thinks was the result of another abortion. She had fever a few days later and great swelling and pain in lower abdomen. She suffered so much with pain, that her doctor gave her suppositories of morphia and belladonna, but the fever had never gone away. On my first visit I found her in bed, with a feeble pulse, some fever and a hectic flush to cheeks; an eruption all over the body, that she stated had appeared during the past week. I attributed it to the use of belladonna, and it shortly disappeared after I stopped the suppositories. The uterus was found enlarged, immovable, and very tender. It was pushed forward and to the right by a large abscess that was quite prominent in left inguinal region; fluctuation was distinct through Douglas' pouch as well as through abdominal wall. Considerable sanious discharge from uterus was present. The same day I opened the abscess through the abdominal wall and let out about a quart of yellow pus. A grooved director was then pushed through the vaginal roof in the median line, behind the cervix uteri against my right index finger, in the bottom of the abscess cavity. Through the new opening I forced my left index finger. The cavity was then flushed with about a gallon of hot solution of corrosive sublimate, 1 to 1,000. A long rubber drainage tube was passed through the abdominal opening and pulled out through vagina. The solution of mercuric chloride was used for cleansing the wound. Patient rapidly improved, and the abscess was healed by the 10th of August. August 27, she came to my office. Had just had a troublesome and profuse menstrual period and felt weak, complained of little jars received in riding on street car. The uterus was found still immovable, somewhat enlarged, very hard and settled back to a position about normal. The whole pelvic organs seemed to be in a mass as if set in plaster of Paris. I began using a mild galvanic current, the positive pole applied to vaginal roof performing the work. The current was used twenty minutes, and this frequently followed by the negative pole of the faradic current along the spine

for five minutes. She was also given the following prescription :

R. Hydrarg. bichlor. gr. jss.
Tr. ferri chlor. ʒv.
Syr. zingiber. ʒj.
Aque ad ʒiv.
℞. et. sig. Teaspoonful in water after meals.

This treatment was continued until October 26, at which time she was obliged to return to her home in Pennsylvania. The galvanic current had been applied about three times a week. At her last visit she stated she had just passed her menstrual period, and with very little inconvenience. A careful examination was made at this time. Her general condition was much better and she complained very little. The uterus was fairly movable, although no smaller, but the pelvic exudate was lessened in amount and softened.

Case 4.—Mrs. S. M., a widow, 44 years old, first came to me June 15 last. She had had three children, the last of which was born fourteen years ago. This labor was severe; she was delivered by forceps and torn. She had child-bed fever and made a bad getting up. She has suffered ever since with profuse menstruation every three weeks, sometimes oftener, and a sensation of weight in her stomach. Large clots were passed every time she was unwell, and the prostration incident to each attack would hardly be overcome in the interval following it. She has been treated by three or four physicians, all of whom told her her trouble was fibroid tumors of the uterus and treated her with ergot and other remedies. Her last physician, after a course of treatment extending over six months, told her relief would come only with the change of life. Her appetite was poor and the feeling of weight pronounced. I found the perineum torn down to sphincter ani muscle, the vaginal walls flabby, and the uterus symmetrically enlarged to about twice its natural size, a little lower than it should be and fixed. The cervix was bilaterally lacerated almost to the cervico-vaginal junction and the vaginal roof thickened and very dense. I could not find a fibroid tumor, and so informed her. I applied the galvanic current as in the other cases, with the occasional application of the positive pole to the interior of the uterus a few days before the expected flow. Dry woolen pledgets were also placed against roof of vagina, sufficiently large to cause slight upward pressure. I noticed the intra-uterine electrode passed the first time $4\frac{1}{2}$ inches. She improved considerably, the hæmorrhages lessened in amount and frequency. Early in August the intra-uterine electrode would pass but $3\frac{1}{2}$ inches. The flow did not appear in September until near the natural time, and in October it was quite four weeks later, lasting but three days and containing no clots. It did not appear at all in November—no premonition of it even appearing.

November 3. The uterus is movable to a considerable degree, and is smaller, its cavity measuring but 3 inches. There is yet some thickening of the vaginal roof.

Case 5.—Miss C., æt. 32 years, white, first came under my care July 12 last, when she came to my office, accompanied by her mother. Her history is as follows :

Began menstruating at 12 years, has never missed a period, nor been free from pain at that time. Has become very severe during the past two years, requiring her to take $\frac{1}{2}$ gr. morphia suppositories, and to remain in bed the day preceding the beginning of the flow, and during the first two days of it. The last period was the worst of her life and she dreads the next—three weeks off.

During the intermenstrual periods she has a dull, heavy pain in lower part of abdomen, most marked on the left side. Her appetite is poor and she is troubled with constipation. Has been treated in Richmond and Philadelphia. She and her mother feared the ovaries would have to be removed, as that had been advised in Richmond, and in Philadelphia they were told nothing else would cure her. She readily consented to an examination, which revealed a small, retroflexed uterus and enlarged and unusually tender ovaries which could be fairly well outlined by the bimanual method of examination, the patient lying in the lithotomy position. They were low but movable. I began to use the galvanic current that day, applying it every day thirty minutes. The current was very comfortable to the patient. After it was stopped I applied a small pledget of wool against the fundus uteri and allowed it to remain there until just before her return the next day. Once I had to give her a mild laxative. This treatment was continued until she came August 4. She preferred no treatment that day, as she felt she was going to be unwell soon. She was suffering from pain through the pelvis. She consented, however, to be treated, and I applied the positive pole of a mild faradic current to the uterine cavity for about ten minutes—the negative pole being placed over hypogastrium. She began menstruating during the following night and had very little pain, but remained in bed for two days. The flow lasted four days.

August 11. Patient returned and treatment resumed. An examination at this time showed the ovaries to be less tender and their position a little higher. I pursued the treatment of this patient diligently, hoping to render oöphorectomy unnecessary.

The next menstrual period was passed with but slight uneasiness and she did not remain in bed. After this period the ovaries could not be felt with the patient lying on her back. I continued the galvanic current for three weeks—applying it on alternate days after the last menstrual epoch. At this time, September 28, she went to her home in

Virginia. At her last visit to me I carefully examined her pelvic organs. The uterus I found in a better position than at first and, I think, a little larger. The whole pelvic viscera had lost its unusual tenderness. She stated she had gained in weight 6 lbs. I have not heard from her since she left the city, but think she would return if she was not feeling well.

Case 6.—K. S., æt. 24, white, single, came to me June 15 last, suffering with almost constant pain in lower abdomen, that gets worse after walking even a short distance. Menses profuse and painful, occurring irregularly, although about every three weeks. She cannot go up and down stairs without considerable pain, and that interferes materially with the proper performance of her duties as housekeeper in a large boarding-house. She confessed having had an abortion performed in June, 1886, after having missed two menstrual periods, and did not get along well afterward, although she did not consult a physician. An examination revealed a dense vaginal roof, holding quite firmly an enlarged, congested and tender uterus; considerable catarrhal discharge was oozing from the eroded cervical canal. A solution of alum in glycerine was applied to the canal and the galvanic current was passed through the inflammatory deposit. A small pledget of dry wool containing some powdered borax was laid against the external os uteri. The discharge from the canal ceased about the middle of July. The galvanic current was applied thirty-six times, the last application being made October 12, when the uterus was movable, reduced in size to about normal, and the cellular tissue about it showed no abnormal deposit. She was feeling very well and had passed the last two menstrual periods four weeks apart, without pain or undue quantity of flow. She was working every day.

Case 7.—Mrs. B., white, æt. 22 years; she is a tall, thin blonde and has been married six months. She came under my care October 4 last. She had generally had a great deal of pain at the menstrual period, but it has been worse since the date of her marriage. The first menstrual epoch after her marriage was two weeks late, and then appeared only after her taking medicine upon the supposition that she was pregnant. She did not desire children and believes she prevented it in this instance. She was confined to bed afterwards with pain so severe that, as she says, she had to take large doses of paregoric to live. She has felt badly ever since, suffering with extreme tenderness in lower abdomen and pain in back. Her last menstrual period ceased one week ago.

At her first visit she appeared weak, pale and nervous. The conjunctivæ were pale, and she walked slowly and carefully with a slight limping on the left side. She complained of frequent and painful micturition, loss of appetite with frequent nausea, constipation and night sweats.

She thought she had malaria, as she was having a chill every day.

October 5 I examined her and found the vagina short and its walls deeply congested and tender. The uterus, retroflexed and retroverted, was quite firmly held in that position by a thick cellulosic deposit to the left and behind it. The eroded cervix uteri was covered by a thick muco-purulent discharge. Applied the galvanic current three times a week. October 10, she felt much better. I added faradization of the spinal cord as a tonic.

This treatment continued until October 31, when patient stated she felt real well and had gained 6 lbs. She has no trouble with stomach, bowels or bladder. The uterus is movable but enlarged, very little inflammatory thickening to roof now felt. Uterus easily pushed forward but no discharge from cervical canal; appetite good, no nausea.

The positive pole was applied after this, each time, to the interior of the uterus until the 12th of November. On the 20th she returned to state that she felt perfectly well, and had menstruated four days since her last visit; did not feel uncomfortable during it and is now doing her own housework. She has no limping and has no trouble from walking. I found the uterus slightly retroflexed and its cavity of normal length.

Case 8.—Mrs. S., white, æt. 37 years; has had seven children followed by an induced abortion at two months two years ago. She was very ill after that and has never recovered from it. She is almost an invalid, having constant dull pains through pelvis that become lancinating after much exertion, requiring her to remain in bed. Menses profuse, and agonizing, lasting from five to ten days; complains of neuralgic headaches, loss of appetite, constipation, and cutting pains when voiding urine. An examination revealed the uterus to be large, hard, and in normal position, but surrounded by a thickened vaginal roof. Any movement of uterus causes considerable pain and prostration. The galvanic current was applied as in the other cases and the nervousness following it was marked—so much so that the application was not extended beyond ten minutes. This occurred July 19 last; after she had rested about one-half hour, small pledgets of wool were applied against vaginal roof around the cervix. She did not return until August 1, at which time she claimed to feel better and that her bowels had been regular without medicines since her last visit. She was anxious to have the electric current re-applied, as some friend had had a "modern miracle" performed on her in New York by means of this agent. I did not like to repeat the experiment of two weeks ago, but as the patient was anxious to have it tried again I repeated it. This time the application was barely perceptible to patient, yet I had to discontinue it after about six

minutes on account of faintness and loss of motion in the lower extremities; her face was very pale and the pulse alarmingly weak. My faradic battery was convenient, and I applied the interrupted current along the spine for a few minutes. It was about an hour before she could walk. I treated this patient until the 2d of October, but did not again employ galvanism on her.

Case 9.—Mrs. A., 42 years old, consulted me July 2 last, regarding some pelvic trouble. She had had two children and a miscarriage at three months three years ago. Her trouble dated from the miscarriage. She suffers with pain in back and bearing down, poor appetite and nervousness. Menses profuse but regular, requiring her to remain in bed four of the six days every month. Has been under the care of a few specialists for a year. I found the vagina large and its walls relaxed—uterus enlarged, low and retroverted. It was almost immovable, very tender to touch, and seems to be imbedded into the thickened vaginal roof.

Galvanism three times a week for thirty minutes, each application being followed by a gradual pressure against the lower side of the fundus uteri by woolen tamponades. She expressed relief just after the first treatment. This method of treatment was pursued until the 9th of October, when the condition seemed normal. I made twenty-six applications of the galvanic current to this patient during the course of treatment.

I do not think much improvement occurred in case 3 during treatment by galvanism. She felt very well, but this was, I think, not due to improvement in the condition of the pelvic organs. Many women suffer a great deal from conditions about the same as this woman has, and I think she will sooner or later have a recurrence of pelvic pain and sensitiveness.

The result in case 5 was very pleasing to me, as I am very glad to save a woman her organs of reproduction whenever it is possible to do so.

If electricity is of much value in this class of cases, I think it has a great field in the future, and should be thoroughly tried before the ovaries and tubes are subjected to the knife.

I do not think much good will come from the use of electricity in large pelvic abscesses or in tumors of a cystic or malignant nature. But I think nearly all other diseases of the female pelvic viscera are amenable to its restorative influence. Even small abscesses and small cysts of these structures are, I believe, curable by the judicious application of this remedy. In many of the cases that have been reported as cures of ectopic gestation by electricity, the condition of the patient's pelvic organs previous to the discovery of the so-called pregnancy had not been known. The diagnosis in them was faulty, but the treatment perfectly satisfactory. It is not unfair to

assume that some of these cysts were not pregnant cysts, but arose in some other manner. Certainly no failure, even in quite inexperienced hands, of the electric current in such cases has ever, to my knowledge, been published.

1314 I St.

THE BACILLUS OF KOCH, AND ITS PATHOLOGICAL INFLUENCE.

Read before the Chicago Medical Society, February 18, 1889.

BY NORVAL H. PIERCE, M.D.,
OF CHICAGO.

It has taken practically over twenty-two years to develop the exact pathology of tuberculosis up to its present degree of completion. Since 1865, when Villemin proclaimed that by vaccination with tuberculous matter, an identical process like that of human tuberculosis could be brought forth in some of the lower animals, the contagious and infectious character of tuberculosis was partly believed or assumed by many. This, however, does not eclipse in the least the brilliancy of Robert Koch's discovery of the specific cause of tuberculosis, nor does it alter the fact that this same discovery is unquestionably the most significant advance made in pathological investigation. Before Koch's memorable communication to the Berlin Physiological Society, the "cheese infection theory," as explained by Buhl, and the weakly "diathesis theory," strove for supremacy as the disguise for real ignorance as to the true cause of the tubercular process.

The student who desires a plain and truthful statement of the condition of our knowledge of tuberculosis before Koch's investigations can do no better than read Klein's paper in the *Practitioner*, for August, 1881. The results of Koch's investigations have been confirmed by every investigator, great or small. The result of this knowledge is used in our every day practice as data upon which we base diagnosis and treatment. Every doubt is silenced as to the specific character of the microorganism named by Koch the bacillus tuberculosis.

Morphology.—The bacillus tuberculosis consists of a cell wall inclosing a protoplasmic body called mycroprotein. It belongs to the smallest and finest bacillary forms known to us. Only the bacillus of mice septicæmia surpasses it in fineness. The length of the single rod ranges from 1.5 to 3.5 μ .—equal to .25 to .75 the diameter of the red blood corpuscle, and there width is from one-fifth to one-sixth of their length. The most of them are equal to half the diameter of a colored blood corpuscle. The ends of these rods appear to be rounded. The bacilli arising from an artificial culture fluid are in general shorter and finer than those growing in the animal organism. The largest forms are found in the sputum of phthisis. The investigations of Raymond and Arthaud,

recently published in a monograph, would prove that the length of the bacillus tuberculosis is in direct ratio to the acuteness of the tubercular process, and it is my belief that the fineness of the bacilli and their straightness seem to bear the same relation. That is to say, the long forms are found in acute miliary tubercles, the shorter in those of a longer course, while in the very chronic the great majority of the microorganisms appear as mere cocci and the rods are thick and crooked. These facts are of very practical importance. In the interior of recent tubercular foci and in young artificial cultures the rods are straight. In the older artificial cultures and in phthisical sputum we meet, besides the nearly straight forms, a majority of slightly bent or curved forms. In still older cultures of low vitality, or in cultures that have been cut off from the air, we find the thick curved form still more numerous, and that the straight forms have nearly or quite disappeared. May we not, therefore, make the following query: Is not the thickening and bending but steps in the process of degeneration of the bacillus tuberculosis (*i. e.*, lessening virulence), and, if so, may we not use this fact as an aid in prognosis, and as a guage, in given cases, as to the possible effect of therapeutics? They are all non-motil.

Artificial Cultivation.—Koch found that from his artificial nourishing grounds inoculated with tubercular matter, he could produce a growth of peculiar characteristics, consisting of the bacillus tuberculosis. They form dry, glossless, compact whitish scales, about the size of a poppy seed, which lie loosely on the upper surface of the desiccated blood serum. They never grow into the same, nor do they ever liquefy it. They do not grow into even the liquid expressed from the blood serum, but always upon its surface. All this is characteristic. No such appearance is presented by any other known bacterium. Their extraordinary slow growth is another characteristic. Not until after the eleventh day are they visible to the naked eye. Two weeks later they attain their maximum growth.

The culture of the bacillus is a most difficult task (of which, more anon), but when a pure culture is produced we may go on *ad infinitum*. If the serum, or the water expressed in dessication of the serum, grows dim, it is a certain sign that the culture is contaminated.

Examined under a low power, say 30-40 diam., these little elevations are found to consist of dainty spindle or "S" shaped colonies. Under a higher power, and after staining by Ehrlich's method, we find these colonies to consist of bacilli arranged parallel to each other, with their long axis corresponding to that of the colonies.

The substances used as media in which to cultivate the bacillus tuberculosis are not very numerous. Dessicated blood serum stands at the head of the list, for many reasons. Agar-agar is fair,

but we do not get the characteristic growths from it. Next in order of fitness we may mention meat-infusion, peptone-agar, liquid blood serum, and bouillon. In the latter, when placed in Erlenmeyer's bulbs, and vessels of like sort, the bacilli settle to the bottom, forming a delicate layer, resembling sand. Nocard and Roux found that the artificial growth of the bacillus tuberculosis is favored in a remarkable manner by the addition of glycerine to the culture medium. According to these experimenters 6 to 8 per cent. should be added to the serum, agar-agar, or gelatine. The addition of 20 per cent. of neutral peptone to the glycerine before its addition to the serum, and 50 per cent. of peptone to equal parts of bouillon, will be advantageous. Under these conditions the bacilli are more fertile and larger. According to Koch's method the bacillus tuberculosis grows only between 30-41 degrees, Cent. The raising or lowering of this temperature, even by so much as a fraction of a degree will hinder their development, so sensitive are they to deviations in temperature. With this fact in mind it is difficult to conceive of their undergoing any phase in their life history outside the human body. We may readily believe, too, that an accurately working thermostat is absolutely necessary. Equally important is the act of implantation. Besides the care required to prevent accidental contamination it is necessary that the inoculation material be placed on the surfaces of the serum in the daintiest and most cautious manner, so that after the inoculation the point of inoculation be almost invisible. Another item of success is the moist, succulent condition of the serum. When the latter becomes dry by evaporation, whether before inoculation, or during the time it is in the incubator the cultures fail regularly. To obviate this rubber caps are fitted over the cotton at the end of the tubes. Probably the salubrity of the glycerine-containing media is due to some extent to the better retention of a moist condition in the upper stratae from the presence of the glycerine.

Spore-Formation.—The phenomenon of spore-formation is still *sub judice*. A brief review of the various experiments and opinions would not be amiss here. We may take as the ripe bacilli those that present when stained a homogeneous appearance, without points of special tinctorial susceptibility. In others stained under precisely similar conditions, we find unstained spots that give them a beaded appearance. These unstained spots were regarded by Koch as endogenous spores. This opinion is still probable but not surely accepted. No one has as yet seen the germination of bacilli from these spots, nor has any one as yet been able to stain them. This, however, does not disprove Koch's opinion; on the contrary, in proof of it stands the great similarity of the endogenous spore formation of other bacteria, and also the great tenacity to life of the bacillus tuberculosis, the latter

being, indeed, especially characteristic of organisms of endogenous spore formation. Against this, again, mitigates Volsch's experiments, who, following the line marked out by Baumgarten, concluded that the bacillus tuberculosis has equal tenacity with or without these colorless spots.

We may ask, therefore, whether these unstained spots are really spores, or "vascular degeneration" (Baumgarten), such, for instance, as we see in the typhus bacillus; further, we find accompanying the bacillus tuberculosis, whether in the animal body or in pure cultivation on blood serum, round bodies which are comparatively quite readily stained and these have been regarded as possibly spores. Against this we have the following: If the *unstained* bacillus be examined in a weakly refracting media, we find spots of greater brightness within the body of the bacillus, and in the bacilli found in tubercular sputum, which are the very ones that show a great resistance to destructive agencies, are found the greatest number of glistening spots. It is, however, our opinion that the glistening spots are not spores, but vacuoles covered by part or a whole of the limiting membrane; that they are a portion of a process of degeneration; *i. e.*, occur at the time when the bacillus is threatened with destruction; but that they are connected in some way with spore formation; that they probably are the matrices out of which the spores have escaped. In support of this opinion, we observe:

1st. Spore formation occurs most excessively under conditions least favorable to growth (see experiments of Raymond and Arthaud in "*Études sur la Tuberculose*," Part I). 2d. Under the same conditions the occurrence of stained round bodies in the surrounding media with same color reaction as the bacillus, and an equally large number of unstained spots in the bodies of the bacilli. 3d. That these same round bodies are very often suspiciously close to the unstained spots in the body of the bacillus. 4th. That under certain unfavorable conditions the bacillus tuberculosis metamorphose into a coccus form, which I believe to be simply sporulation. And right here we may draw a practical conclusion. Numerous opponents to the bacillary origin of tubercular processes have held up the fact that the bacillus tuberculosis is not always found in so-called tubercular pus—quite justly, too. But this is because only spores are present, which, although less readily stained, will develop into the characteristic bacillary form under the proper conditions.

Staining Reaction.—The bacillus of Koch has tinctorial qualities that differentiate it from all other known bacilli excepting the bacillus lepræ. It was Koch's original opinion that the bacillus tuberculosis alone could react to the alcoholic aniline solutions. This was found to be erroneous. The distinctive feature is their resistance to de-

colorizing agents, especially the mineral acids. We can best understand this phenomena by presupposing with Ehrlich that the bacillus tuberculosis possesses a tough capsule which, while resisting to some extent the entrance of the coloring matter, is impregnable to the decolorizing agent, thus distinguishing it from all known varieties of bacilla, with the exception above mentioned.

Agents Unfavorable and Destructive to Growth.

—The bacillus tuberculosis is quite able to endure the influence of any or all of the digestive secretions of the animal organism, and especially those of the stomach, as was proven by Falk in his artificial cultures and by the positive results obtained by Schell and Fischer in their feeding experiments. The tuberculosis bacillus has a very great resistance comparatively to the action of all disinfectants. Thus, the bacillus tuberculosis was destroyed only after twenty hours' contact with a 3 per cent. carbolic acid solution. This latter substance is therefore not to be relied upon, especially in the disinfection of tubercular sputum, in solutions of less than 5 to 10 per cent. Another fact of some importance is that corrosive sublimate is not applicable in disinfection of sputum; not because of a resistance on the part of the bacillus tuberculosis to this most powerful germicide, but because it *cures* the sputum, thus materially hindering the complete mixture of the solution with all parts of the sputum. In pulverized sputum the bacilli were destroyed in twenty hours by 1:5,000 H_2Cl_2 . Baumgarten showed that a solution of 1:1,000 destroyed the spores in a very short time. Schell and Fischer found that besides carbolic acid and corrosive sublimate, absolute alcohol, sat. sol., salicylic acid, acetic acid, liq. ammoniæ caustica, sat. sol. of aniline in water, and the vapor of aniline oils generated at the temperature of the room would kill the bacillus after twenty hours. Practically we have no destructive agent that can be compared to heat, and especially moist heat, and this should be employed whenever possible.

To conclude this section we will discuss the question whether iodoform has any influence upon the growth of the tuberculosis bacillus or not. From the experiments of Baumgarten, Kunz, and the latest, of Rosing, we must doubt its power. The observations and deductions of Bruns and Nauwerck have slight weight as against these latter experiments. These surgeons claim that by the injection of iodoform into tubercular abscesses they were not only able to terminate the abscess, but to actually reduce the number of bacilli in the abscess walls. First, we must know that the number of bacilli in tubercular abscess walls are constantly changing. And, further, supposing that the number were reduced, we cannot say positively that this result was due to iodoform, as Bruns injected not pure iodoform, but a solution of it in alcohol and glycerine. We know positively that the former agent is a direct

poison to the bacillus tuberculosis. We know, too, that it is highly wrong and inconsistent to add glycerine to anything intended to hinder the growth of the tuberculosis bacillus. Further, we must consider, according to the researches of Baumgarten in the healing of tubercular abscesses, that the bacilli in them possess a relatively minor energy, an insignificant malignity; that the colonies are comparatively small, and that these colonies are few in number. The majority of these are in a good way to die off of their own accord, and it only requires the removal of the detritus, to prevent auto-inoculation, to bring about a cure.

Pathology.—The greater portion of the time allotted to the reading of this paper has already expired, and it seems like a pathological sacrilege to attempt a presentation of so great a subject in so short a time as remains. However, I will deal with it as best I can, though, as you must know, only cursorily.

The bacillus tuberculosis may gain an entrance into the human body in one of three ways: first, by respiration; second, by alimentation; and third, by inoculation. The subsequent pathological varieties will depend: 1, upon the conditions of the tissues of the individual; 2, the place of invasion; and 3, the vitality or degree of malignity of the bacilli invading.

1. The individual. There can be no doubt that there exists in some people a susceptibility to and in others an immunity from the invasion of the bacillus tuberculosis. The dog as a class enjoys an enviable immunity, the rabbit a susceptibility. This susceptibility may be inherited or acquired.

2. The place of invasion. It is a remarkable fact that no macroscopic changes occur in the great majority of cases at the place of primary invasion except in cases of inoculation. This is due, most likely, to the minor virulent condition of the bacilli. As was pointed out under the head of "Conditions Favorable and Unfavorable to the Development of the Bacillus Tuberculosis," it is extremely improbable that they can develop outside the animal body, on account of their exquisite sensitiveness to temperature change, but disseminate themselves outside the body mainly as spores. In the majority of cases the invading bacilli are in their spore stage and develop into ripe bacilli after they have secured a suitable nidus in the body. Again, the normal secretion, at least of the alimentary tract, while not destructive, has a deleterious effect upon their virulence. An entrance gained, however, they are taken by the lymphatics either to the thoracic duct, and there poured into the blood, or they gain lodgment in the lymphatic system before this takes place and multiply, and the tubercular process begins.

Whether they develop at the point of primary invasion, which is rare, or gain entrance into the

lymphatic or circulatory system before development, the results are the same—a more or less acute or chronic tubercular process. To be sure, the pathology of the resulting tubercular process will differ according to the mode of infection. Thus, in hæmatogenous invasion of the lung or an invasion by bacilli circulating in the blood, we have as a result the small or miliary tubercular process scattered throughout the lung parenchyma, one alveolus at a time becoming involved. This is easy to understand. When, however, a number of fully developed and virile bacilli are inhaled and they attack the epithelium of the whole lobule or lobules at once, the result is the cheesy lobular pneumonia. This process may be brought about in rabbits by intra-tracheal injection of pure culture bacilli. The identity of this process with a true tubercular process is not, I believe, sufficiently recognized in this country. The rapidity with which the bacilli are taken up by the lymphatics is astonishing. Three days after the inoculation of the anterior chamber of the eye of a rabbit they have already forced themselves into the auricular lymph glands. And in spite of the thorough removal of the affected eye at this early date the animal died of general tuberculosis.

When the lungs and kidneys are examined twenty-four or forty-eight hours after an intravenous injection of bacilli, it is only by the most thorough search that here and there a tubercle bacillus can be found. Yet, it is proven that fourteen days or three weeks later countless numbers may be found in the above-named organs, proving that a number are retained by these organs, and that they offer a favorable ground for their growth. It is wondered at why, in lungs and kidneys, in spite of a relatively small retention of bacilli, larger and more numerous foci are developed than in spleen, liver and bone. We may presume that the different organs do not furnish an equally good nourishing ground for the bacilli, that the lungs and kidneys furnish a more salubrious resting place than the bone and liver, a presumption supported by many analogies.

The histogenesis of tuberculosis cannot be dealt with here. We will content ourselves with studying that pathognomonic iota wrought by the bacillus tuberculosis—the miliary tubercle.

It is impossible to give a definite size to the tubercle. In one case it is invisible to the naked eye, in another it may be as large as a pea. When visible to the naked eye they appear as small round, more or less opaque, pearly-white nodules. When occurring in an organ that tends to retract when cut the tubercle stands out in bold relief.

Histologically the tubercle consists of a giant cell around which are arranged the epithelioid cells, smaller than the giant cells, around which in turn are grouped the lymphoid cells. The whole is most frequently held together by a reti-

culum. The absence of blood-vessels is characteristic of the tubercle. The lymphoid bodies are the first to appear at the point of attack of the bacillus tuberculosis. Their nucleus occupies nearly all their body, leaving only a small margin of protoplasm. On the sixth day after the inoculation of animals the epithelioid cells appear—the first distinctive step in the tubercular process. They appear at the point where the tuberculous bacilli are most numerous. Lastly the giant cells are formed, having their nuclei, ten to a hundred, *arranged in the periphery of the cell*. The epithelioid cells originate from the fixed epithelium and endothelium of the tissue involved. The giant cells are caused, most likely, by an inhibition of the normal cell divisions, the cell increasing in size notwithstanding. Between the cells and within them are grouped the bacilli. Twenty may be counted within a single section of a giant cell. The trabeculum is derived from the preëxisting connective tissue elements; changed, of course, by the new order of things. The roundness of the tubercle may be explained thus: In the beginning of the tubercle formation the cell-growth is greater at the centre of the bacilli colony than at the periphery and, as there is a pressure exerted upon the centre by the periphery, a rounding up, as it were, results.

Regarding the uncertainty of the presence of the giant cells in tubercles we would say that their absence is comparatively very rare. If microorganisms are not necessary in every case to the development of giant cells, we know that the bacillus tuberculosis possesses this capability to a supreme degree. Yet, like many other things in nature, they may fail.

The tubercles may undergo: 1, reformation; 2, calcification; 3, caseation; 4, liquefaction; 5, suppuration; 6, ulceration. Of these we will only speak of coagulative necrosis and suppuration. We cannot regard the caseous process (coagulative necrosis), as it occurs in the tubercle, in the sense used by Weigert in describing those processes taking place by reason of simple arrested circulation or nutrition; as, for instance, in a non-infected infarct. We must look to the bacillus for a part of the change wrought. True, lack of nutrition has something to do with it, but the digestive power of the bacillus has more. And it may be thus looked upon as characteristic of the tubercular process, that no formation so small in size as a tubercle undergoes such a change.

Suppuration.—The bacillus tuberculosis never forms pus. Only when the so-called tubercular granulation tissue has become infected with the staphylococcus or streptococcus can true pus be formed. The contents of a purely tuberculous abscess contains only a few round cells, but an amorphous shreddy material, the result of the digestive power of this ptomaines from the bacillus tuberculosis upon the granulation tissue.

THE ETIOLOGY, PATHOLOGY AND TREATMENT OF ACUTE CATARRH OF THE UPPER AIR PASSAGES.

Read before the American Rhinological Association, September 12, 1888.

BY J. G. CARPENTER, M.D.,
OF STANFORD, KY.

The etiology of acute catarrh is either local or exciting, predisposing or constitutional: the use of tobacco, occupations attended with much dust, smoke, irritating gases, excessive moisture or dryness of the atmosphere, sudden changes of atmospheric temperature, as from a dry warm to damp or damp and cold weather, or from a warm room to the cold air without being sufficiently protected with wraps, getting the feet wet, standing or sitting for some time on a cold surface. A very pernicious habit is wetting the head, which is practiced daily by young ladies, and also by mothers and nurses, who wet the hair and scalp of children one or more times daily and thus develop acute or subacute catarrh, and the child is seldom over one attack before another begins; finally chronic catarrh of the upper air passages is established. Exposure to the night air without extra wraps is one of the most frequent causes of acute catarrh. Wearing damp clothes, changing beds and sleeping in rooms without fire (when not accustomed to the latter), exposure to currents of air, insufficient clothing, substituting light and thin goods for heavy and warm ones, changing boots for shoes or slippers, going without collar, cravat or cuffs, sitting up late at night and allowing the room to cool before retiring, facing the wind in traveling and not having the nose, mouth, throat and chest protected with extra wraps, removing the clothes and exposing the body in an almost nude state for half an hour or more before retiring, as many ladies do, are prevalent factors in the production of acute catarrh.

Mothers and nurses often develop acute inflammation of the upper air passages by getting up at night with children or patients in the cold air and not clothed properly; the body is not kept at the same temperature as when in bed, the consequence is that the integument is quickly chilled, its action suppressed, and through reflex irritation the mucous membrane of the upper air passages becomes congested or inflamed, as it is generally the weakest point, and most subject to irritation.

Too much clothing, as wearing sealskin sacques, chinchilla ulsters, fur collars and overshoes, on improper occasions as in pleasant weather, and not removing them on entering the house, church, theatre, or when making social calls, is equally as prone to develop acute catarrhal inflammation as insufficient clothing and undue exposure to inclement weather. The body should be clothed so as not to cause perspiration nor chilling.¹

¹ It is said that sealskin sacques have in a given time caused more deaths than small-pox in New York (Bosworth).

Two barbarous customs are: first, the kind of hats or bonnets worn by women, which give no protection to the head; second, the manner in which boys and girls are dressed by the affluent, viz.: overclothing the trunk and head and allowing the limbs to be in an almost nude state, especially the knees, legs and feet, even in the coldest weather.

One of the most, if not the most prolific causes of catarrhal inflammation of the upper air passages is the treatment given infants immediately after birth. Generally the first thing that happens to the babe after the establishment of respiration is a cold in the head; or, as the nurse would say, "the little thing has the snuffles." It should be the exception and not the rule for infants to acquire a rhinitis shortly after birth from unnecessary exposure, chilling and sudden radiation of heat and evaporation of the body. It is quite common for the specialist to hear, "Doctor, my child has had a cold since its birth." The infant, before nor after severing the cord, should not be exposed, but wrapped in flannel of several layers in thickness. If very feeble, the cord should not be severed until pulsation has ceased, then artificial heat applied, the skin anointed with vaseline and the clothes quickly adjusted, an extra wrap applied and the babe placed at the mother's breast. If necessary, in the fall, winter or spring, artificial heat should be used. At the time of birth the temperature of the room, for the benefit of the babe, should range from 85° to 100° F. A sudden change of temperature from 20° to 60° F., from hot to cold, would injuriously affect a robust adult, nude or unprotected; how much greater must be the change and shock in the newly born babe, born and washed and dressed in a cold room and unnecessarily exposed. Many affections of the nose, throat, ears, eyes, trachea and bronchi could be avoided in children subsequent to birth if the accoucheur would use the proper precautions, and give the appropriate directions.

Constitutional causes of acute catarrh are rheumatism, malaria, measles, scarlatina, small-pox, diphtheria, uterine affections, especially endocervical metritis, neurasthenia. Excessive fatigue, either mental or physical, by impairing the general health, places the system in a condition favorable to acquiring catarrh of the upper air passages.

Pathology of Acute Catarrh.—The mucous membrane, the blood-vessels, nerves, lymphatics of the rhino-pharyngeal cavities, supply or communicate with those of the eye, frontal, ethmoid and sphenoidal sinuses, the antrum, maxillars, the middle ear, lower pharynx, the tonsils, buccal cavity, larynx, trachea, bronchi and lungs; consequently an irritation or inflammation of the superior respiratory tract is easily extended to these parts by reflex action or continuity of tissue.

The force of irritation and inflammation in acute catarrh of the upper air passages may be

confined to the nares *per se*, the naso-pharyngeal chambers, or to the latter and the ethmoidal, sphenoidal and frontal sinuses and eyes, middle ears and antrum, or to the pharyngo-laryngeal cavities and trachea, and as the inflammation of one organ or region is of greater intensity and duration and predominates over the others, it is designated by that name, as rhinitis, rhino-pharyngitis, laryngitis, etc. Acute and subacute catarrh may end in resolution or in the chronic. When a chronic naso-pharyngitis is once established, it is quite easy to develop an otitis media, a conjunctivitis, a laryngitis, or rhinitis frontalis or ethmoiditis, sphenoiditis, or a tonsillitis. (The writer believes that catarrh of the upper air passages is the predisposing cause of phthisis in many cases—yes, in the majority of cases, it might be stated without exaggeration. Feebleness of constitution is inherited from consumptive parents, but consumption is not, it is acquired. "The discharge or secretion of catarrhal inflammation and the lymph channels afford the most favorable soil and habitat for the growth and reproduction of the bacillus tuberculosis," and when the catarrhal secretions contain bacilli they are capable of affecting healthy persons when dried, pulverized, and blown by the air and respired; hence, to avoid phthisis pulmonalis, keep the constitution normal, the upper respiratory passages healthy, and prevent a suitable soil for the development and reproduction of the bacillus tuberculosis. In every case of phthisis pulmonalis the writer has observed, rhino-pharyngeal catarrh, in one or more of its stages, was present.)

For convenience and perspicuity acute catarrh may be divided into three stages. 1, the dry or congestive; 2, the moist or liquefactive; 3, the muco-purulent.

In the first stage there is an irritation of the mucous lining directly or reflexly; following this, there is dilatation of the blood-vessels with hyperæmia, redness, heat, tumefaction, and pain from pressure on the terminal ends of the nerves. Rhinoscopic examination shows a red or dark red, dry, congested, swollen appearance of the mucous lining, the blood-vessels are distended, enlarged, elongated and tortuous, and the lining often quite œdematous in those parts where it is loosely attached, or where it lies upon loose areolar tissue beneath.

Second Stage.—In addition to the first stage there are the following abnormal conditions, transudation of serum, diapodeses of the white corpuscles, infiltration of the connective tissue, cell proliferation, organization of lymph. The walls of the mucous follicles are swollen, they are distended, abnormally active, and throw out an abundance of mucus upon the surface of the mucous membrane. The mucous and submucous areolar tissue are infiltrated, thickened and œdematous. On rhinoscopic examination the dry, red,

glazed appearance has given way to a moist, juicy state of the surface; irregular elevations are seen corresponding to the distended crypts. There may also be infiltration and cedema of the turbinated processes and septum, causing nasal occlusion, enlargement and tenderness of the anterior cervical and maxillary glands, uvula, palate and tonsils.

The third stage is a continuation of the second, and is diagnosticated by a denudation or an erosion of the epithelial layer, leaving a raw surface, especially where there is much desquamation; supplementing this is a muco-purulent or a purulent secretion. Should resolution take place, the inflammatory products are absorbed, the blood-vessels contract to their normal size, excessive secretion is arrested, and the mucous surface presents its former healthy appearance.

On microscopic examination the mucous secretion contains tessellated and squamous epithelium, also columnar ciliated epithelium. The secretion from the upper pharynx is columnar ciliated epithelium; from the lower squamous epithelium; the epithelium of larynx below the superior vocal cords is columnar ciliated, above this point squamous; that of the trachea is also columnar ciliated. There are in addition, in the second state, mucus, white and red blood corpuscles, and pus corpuscles in the third stage.

Should acute catarrh not end in resolution, but the chronic, there are developed in the mucous and submucous or connective tissue new layers of connective tissue elements. In the epithelial, there is an increased activity of cell growth by which it becomes abnormally thickened and hypertrophied, the glandular tissue is also involved, but to a limited extent. In the nasal cavities, the thickening is a regular and uniform hypertrophy, but appears irregular and nodular on the mucous surface. The hypertrophy is developed to its greatest extent in the turbinated bones; the inferior more than the middle, the latter more than the superior. The meatuses and septum are also affected by the infiltration.

Atrophic catarrh usually follows the hypertrophic and is generally late in developing, but may occur early, from recurrence of the acute or sub-acute catarrh, by which a deposition of lymph into the submucous connective tissue around the glands and follicles results, causing pressure on their orifices preventing the escape of mucus. After this pressure has existed for some time atrophy of the glandular and follicular tissue takes place.

ABSCESS OF LIVER: RECOVERY.

BY L. L. WILLIAMS, M.D.,

PASSED ASSISTANT-SURGEON, U. S. MARINE-HOSPITAL SERVICE.

C. B., seaman, aged 36 years, native of Maine, was admitted to the U. S. Marine Hospital, at

Boston, Mass., Feb. 14, 1888, with symptoms of ulcerative colitis. He had had diarrhoea for two years, the discharges being watery and occasionally mixed with mucus and blood. There was tenderness on pressure over the entire course of the colon, notably the ascending portion. Examination of the rectum with the speculum gave a negative result. Patient's appetite was poor and his appearance anæmic. Ordered opii pulv. and bismuth subnit., milk diet, and rest in bed. Under this treatment there was some improvement of the intestinal symptoms.

April 4th. Had a chill, followed by fever and sweating. Had been complaining of pain in right hypochondrium for several days previously. From this time patient had irregular chills and sweats, with increased temperature. Tenderness developed over the hepatic region, and the area of hepatic dulness was found to be abnormal in extent, reaching from just below the nipple to a point 3 centimetres below the border of the ribs. From the symptoms and history a probable diagnosis of abscess of the liver was made, and on April 11th the aspirator was introduced in the eighth intercostal space and 100 cc. of viscid, blood-stained pus evacuated.

April 15th. 300 cc. of pus removed by the aspirator; pain relieved by the operation and patient slept better.

April 20th. 500 cc. of pus removed by the aspirator. As the abscess was evidently enlarging, it was determined to resort to a more radical operation.

On April 22d an incision was made in the eighth intercostal space, between the axillary and mammillary lines, and extending down to the surface of the liver. The chest cavity was obliterated at this point, owing to adhesion of the costal and diaphragmatic pleura. As no fluctuation could be detected, the incision was continued into the tissue of the gland, in the direction of the previous punctures, and the abscess cavity entered about 3 centimetres below the surface of the organ. The opening was enlarged by the forceps and rather more than 1000 cc. of reddish, grumous pus evacuated. The cavity was irrigated with 1:20,000 warm corrosive sublimate solution, a large drainage tube introduced, a dressing of absorbent cotton, wrung out of sublimate solution, applied and the whole covered by a large pad of oakum secured by a bandage. Cocaine was used as a local anæsthetic.

Next morning, April 23d, the dressings were found saturated with pus and bile, and patient was decidedly jaundiced. The abscess cavity was irrigated with solution of bichloride of mercury, 1:20,000, but this caused so much pain and symptoms of collapse that it was never repeated. For the following notes I am indebted to Assistant-Surgeon G. T. Vaughan, M. H. S., who at this time took charge of the case.

"The abscess continued to discharge freely through the drainage tube, gradually decreasing in quantity, till the 12th of May. On this day, as there had been only a small amount of serum on the dressing for two or three days, the tube was removed.

"Patient's condition steadily improved from opening of the abscess. Temperature 36.8°C. , in morning, 37°C. , in evening—once only reaching 38°C.

"Discharged, recovered and seaworthy, June 4th, 1888."

CLINICAL AND EXPERIMENTAL RESEARCHES UPON THE PATHOGENESIS OF FEVER AND THE PATHOGENIC ACTION OF SOLUBLE FERMENTS.¹

A Paper presented before the Académie de Médecine of Paris.

BY M. ROUSSY.

[Translated from *La Semaine Médicale* by ARCHIBALD CHURCH, M.D., of Chicago.]

In bringing forward to-day the second part of the investigations I have undertaken in regard to the pathogenesis of fever, I will recall that M. Hayem three weeks ago presented to the Academy in my name a new chemical substance, pyretogenine, isolated from a microorganism and possessing the singular property, in minute doses, of determining intense and typical attacks of fever.

In the paper describing at length the physiological effects produced by this substance, I announced that I had also experimented with other substances which I proposed to range under the denomination of calorigenes or thermogenes, because they only determined a feeble elevation of temperature without producing the other perturbations characteristic of fever. Further, I announced the existence of frigorigenes, chemical substances of microbial origin, among which was one more energetic than the others that I designated frigorigenine.

I gave in my first paper neither the name of the microorganism which had furnished the pyretogenine nor the process which I had employed in its extraction, but promised to make both known in a subsequent communication, which to-day I submit in two parts. In the first I make known my chemical and experimental investigations of the pathogenesis of fever, and in the second I bring forward a general theory as to the nature and the physiological and pathogenic rôles of diastases or soluble ferments.

First as to the clinical observations. I noted intense fever occurring in adults and children after overeating, after the ingestion of stale beer, of

tainted meat, of stagnant water containing dead leaves, hay or flax. The abrupt appearance of this fever and its more or less rapid and unexpected subsidence led me to the hypothesis that the cause was the presence in the organism rather of soluble substances than of microorganisms.

With the purpose of verifying this hypothesis I have experimented on rabbits and dogs with substances analogous to those which seemed to me to have produced the fever observed in man. These investigations, extending over more than three years and embracing more than 400 varied experiments, have led me to formulate the following conclusions:

1. Subcutaneous and intravenous injections of stale beer, of macerations of hay, of tainted meat, etc., always determine fever in dogs and rabbits.

2. This fever appears very soon after the injection and shortly attains a temperature of 42°C. In these cases the injection produces an infectious disease which is generally followed by death. The intensity and rapidity which characterize this fever lead me to think that it should be attributed more to the soluble chemical substances than to the mechanical action of the microorganisms which are contained in the injected liquids.

3. Intra-stomachal injections produce but little fever in rabbits and are without effect upon dogs, leading to the thought that the soluble chemical substances are modified or destroyed in the intestine or in the organs they must traverse to enter the system, and possibly in dogs may not be absorbed at all.

Second, as to the frigorigenes or algogenes of microbial origin. These chemical substances may be encountered in animal matter destroyed by fermentation. They are susceptible of extraction by ether, chloroform and alcohol.

The substance extracted by ether possesses the most energetic frigorigenic properties. It produces a temperature fall of 4°C. It seems to have a tendency to crystallize. It acts as a base in the presence of the ordinary reactive agents of alkalis. For these reasons it seems proper to distinguish it by the special name of frigorigenine or algogenine.

The production of frigorigenic substances appears to be subject to particular conditions of animal fermentation by microbic action, for one does not encounter these products in all animal matters undergoing fermentation, or at least in all stages of that fermentation.

The existence of these substances being absolutely certain, they should be sought in the cultures of cholera bacillus and in patients presenting temperature below the normal.

In experimenting with the putrid liquids cited above I have been particularly struck; in many instances, by the pyretogenic power of stale beer. Examining more closely the composition of this liquid I found in it a large number of yeast cell-

¹This article takes up the very interesting subject of disease, and particularly fevers, being produced by the chemical products of bacteria rather than by the mechanical action of the bacteria themselves, and seems to point the way towards a more intimate knowledge of pathology.

ules. In using the stale beer I have then, in short, merely employed a maceration of yeast cellules. I was thus led very naturally to attribute the pyretogenic properties of the liquid to the yeast spores which it contained in such great abundance.

Such is the starting-point of all the experiments I have subsequently made with the soluble products of the yeast cellules, and which have given me such satisfactory results.

Third. The water used to wash the living spores of beer yeast possesses energetic pyretogenous properties which may not be attributed to the mechanical action of the microorganisms, and which are due to the soluble chemical substances held in solution. These substances are nearly entirely retained in the pores of the finest mineral filter, and filtration by means of such a filter is an undesirable proceeding in making a study of soluble substances. Solutions of chlorate of strychnia perfectly made lose their toxic properties by passing through a mineral filter, and accurate weighing shows that 70 per cent. of the strychnine remains in the filter. The same is true of curare. The best means of studying chemical substances in solution is to isolate them by chemical processes. The soluble chemical substances which impart the pyretogenic properties to the water which has been used to wash the cellules of yeast are the direct products of the microorganisms and constitute the results of their processes of secretion or excretion. These substances take on much more energetic pyretogenous properties when the spores are reduced in a neutral medium, such as distilled water, to a condition of autophagia. They may be extracted in sufficiently large quantity for separate study by treating a small quantity of sterilized distilled water containing several kilograms of spores with a large quantity of strong alcohol. Owing to their unequal solubility in water, alcohol, etc., they may be obtained separately and in a pure form. In this manner I have succeeded in isolating four substances, of which three are crystallized, and the fourth composed of fine homogeneous granules.

The most active of the substances elaborated by the yeast cellules, and which most influences the process of animal calorification, is the one presenting the granular form. Its pyretogenic energy is surprising. A few tenths of a milligram to the kilogram of animal weight rapidly produces in the dog an access of most intense and typical fever. This access of fever describes its evolution in nine or ten hours and in three phases, during the course of which all the functional troubles characterizing an access of paludal fever manifest themselves. By reason of its physiological potency, so powerful and so well defined; by reason also of its chemical properties, I think one could not do better than to designate this singular substance under the name of pyretogenine.

Among other chemical properties it has the power of breaking cane sugar into glucose and levulose. A minute quantity suffices to transform a relatively enormous amount of sugar. It acts, then, exactly as a diastase, and conducts itself toward reagents as a base.

I now come to the second part of my task, the general theory of the nature and the physiological and pathogenic rôles of the diastases or soluble ferments. Pyretogenine is, as we have seen, one of these soluble ferments which one invariably finds where cellules, without being destroyed, and whose action has hitherto been mysterious, seem to break up the organic molecules merely by their presence. Diastases appear to reduce organic material by chemical processes more or less analogous to those which take place in the reactions of sodium, potassium or baryta upon fats or upon albumen. Yet it is not absolutely known by virtue of what property these singular ferments act.

Now, in presence of the clearly toxic properties of pyretogenine, may one not suppose that the other diastases have similar properties, and that they reduce organic matter precisely because of this toxicity. This is a new and positive fact hitherto unknown to science, and seems to me to be great with consequences for general pathology. Its bearing cannot be mistaken by any one. To generalize: all spores, in short, all microorganisms, elaborate diastases or soluble ferments which they employ to attack and transform material either without or within the confines of their proper substances, and these ferments often have a most surprising chemical energy, liquefying the most resisting and apparently unattackable substances.

Three years ago nearly all microbiologists were occupied merely with the pathogenic rôle played by microbes considered in themselves the active elements. I would call attention particularly to the necessity of studying the pathogenic action of the chemical substances which are the results of their life-processes.

MEDICAL PROGRESS.

THE TREATMENT OF LOCOMOTOR ATAXY BY SUSPENSION.¹—Under the above title, Dr. A. de Watteville has translated and edited the paper in which Professor Charcot describes the method of treatment of locomotor ataxy, and other spinal diseases, at the Salpêtrière, of which some account was first given in our pages in the letters on "Medical Paris of To-day." So much interest has been shown by our readers in this subject, and so many inquiries have been received, that

¹Translated from the French of Professor Charcot, and edited by A. de Watteville, M.A., M.D., B.Sc., Physician to the Electro-Therapeutical Department of St. Mary's Hospital. With 4 illustrations and notes. London: D. Stott, 370, Oxford Street.

we publish subjoined that part of Dr. de Watteville's pamphlet which relates to the practice of the methods of treatment and its details. He writes as follows :

As was to be expected, some persons have already endeavored to improve upon the method, such as, for instance, by advising the adjunction of plaster spinal supports that are, to say the least of them, entirely superfluous under the circumstances, at any rate in cases of true ataxy.

Professor Charcot has thought it advisable, therefore, to publish the following technical details, suggested by an experience acquired in the course of over 800 suspensions, practiced under the supervision of his chief assistant, in the cases of forty patients. For, though the operation is, in itself, very simple indeed, it yet requires a certain skill that is more easily acquired with the assistance of definite rules, than by the sole experience of entirely original experiments.

The apparatus used is that contrived by Sayre, of New York, for the application of plaster jackets used in cases of spinal deviation. Though pretty extensively known, we shall give a short description of the form of it used in Professor Charcot's *clinique*. A transverse piece of iron, about eighteen inches in length, is suspended by means of a central ring to the pulleys which are used to lift the patient from the ground. Each extremity of the bar ends in a hook, intended to support the ring, which carries the straps intended to give support under the armpits. Several notches on the upper aspect of the bar serve to fix the rings from which hangs the head-piece. The latter consists mainly of two broad strips of leather, elongated oval in shape, moulded to receive the chin and the occiput respectively. These are connected above with the rings just mentioned, and are held in position by means of a strap sewn to the posterior flap, and fixed to buckles carried by the chin-piece, so as to hold the head-support in place when the patient is suspended.

Much depends upon this strap, which must be tightened enough to prevent any slipping, and yet not sufficiently to cause compression of the blood-vessels of the neck, and thereby unpleasant head-symptoms. It must be provided with a sufficient number of holes to accommodate itself to the varying thickness of the neck among those to be suspended. In case of need, which is not often, a soft body, such as lint or cotton-wool, may be inserted so as to prevent undue pressure of the strap or broad pieces upon the skin. It is necessary to exercise much care in fitting the head-piece and padding, so as to suit the peculiarities of each subject. The size of the head determines the notches into which the rings of the head-piece are to be fixed, the larger the head the wider apart they must be, of course.

When the head is duly disposed of, the shoulder-

pieces are slipped under the armpits. Though they may appear of minor importance, they really play the part of regulators during the period of suspension. For it is necessary that whilst lifted off the ground the patient should not be entirely supported by the head-piece, for then the traction would become, in some cases at least, absolutely intolerable. Though the weight of the body must be distributed upon other points, this additional support must not be so effectual as to prevent as complete an extension of the spinal column as possible.

The shoulder-pieces consist of elongated cylindrical padded cushions, terminating in straps provided with a series of holes so as to suit, by appropriate lengthening or shortening, the requirements of each patient. This adaptation is very important; for if too short, the shoulder-pieces exercise such a pressure upon the axillary vessels and nerves as to compel the operator to bring the suspension to an abrupt and premature termination. If, on the other hand, they are too long, the traction on the structures of the neck may become too painful to be tolerated, and interfere likewise with the treatment.

Careful trials are necessary to determine the exact length of the several straps; but after three or four operations it becomes easy to decide the arrangement suitable for each case.

When all is ready the physician orders his assistant—with some practice he may do without one—to apply traction upon the core, very gently and slowly, so as to avoid jerks, and to accustom gradually the muscles and ligaments to the unusual tension to which they are going to be submitted. The patient is to be cautioned not to make any movements whatever whilst he feels himself being lifted off the ground, for they would give rise to unpleasant lateral and rotatory displacements.

As soon as the toes cease to touch the floor, the operator holds the patient lightly, so as to check any oscillation or torsion of the cords, and carefully watches the number of seconds that elapse, so as to regulate minutely the length of each suspension. During this period the patient is made, at intervals of fifteen or twenty seconds, to raise his arms laterally away from the body, so as to transfer more weight upon the head-piece, and so render the traction upon, and elongation of, the vertebral column still more complete, as complete as is tolerated by each individual. Much care and vigilance is to be bestowed upon the proper performance of these abductions of the arms, both by patient and physician. As a rule, the longest time of suspension must not go beyond four minutes, three minutes being taken as the average duration. Half a minute is enough at the outset, the maximum being gradually reached during the first six or eight applications of the treatment.

Here again it is essential to take into account certain individual susceptibilities or physical peculiarities, among which stands foremost the body-weight of the patient; for whilst a person weighing from about 130 to 150 pounds may be suspended forthwith during two minutes or more, the case is quite different in the case of those whose weight reaches 180 pounds or more. In the latter, the tension to which the structures of the neck are subjected may become very severe and painful, and be felt sometimes for a whole day afterwards—an occurrence which must be avoided if the treatment is to be correctly carried out.

It is well to note that certain patients have such a wish—a very natural wish—to get better, that they think themselves bound to stand any amount of pain without complaining; but this circumstance is positively detrimental to the success of the treatment, which must be accompanied with but trifling discomfort at the most, without real pain or fatigue, lest it should defeat its own ends.

The maximum length of the suspension must, therefore, be suited to the requirements of each patient; it is obvious that in the case of heavy persons the effect on the spine must be very thorough and effective, owing to the greater traction to which it is subjected. Suspension must not be carried out oftener than once on alternate days, otherwise it may become more harmful than beneficial. The time of the day is indifferent, but regularity in the operations is to be observed.

When the full time has elapsed the operator very gradually lets the rope loose, so as to avoid every trace of jerking during the descent. The patient is to be supported whilst being freed from the apparatus, and made to rest awhile in an arm-chair brought near for the purpose.

The patient, before the operation, should divest himself from his coat, so as to give freedom to the arms, and his neck must be free from any pressure from the collar, so as to avoid any trouble or discomfort from compression about the neck. Sayre's original apparatus usually comprises a movable tripod, to the top of which the upper pulleys are fastened by means of a hook. This tripod is not to be used for suspending ataxics, who, being often deficient in power to sustain their equilibrium, are apt to seize convulsively its legs in order to steady themselves, and in so doing would knock down the whole apparatus, and injure themselves and the bystanders. The suspensory apparatus must be fixed to an iron ring firmly screwed in the ceiling.

"The results obtained by Professors Eulenberg and Mendel at the Berlin Clinic for Nervous Disease in the cases of twenty ataxics, fully confirm, so far as can be judged from the comparatively

recent introduction of the new treatment, the encouraging outlook sketched out in Professor Charcot's communications. The improvement observed bears chiefly upon the walking power, the equilibration, the lightning pains, and, in a few cases, the bladder troubles. Moreover, no bad symptom whatever has been observed, even in the case of the female patients who are undergoing the regular course of suspensions. At the same time, the most sanguine observer must acknowledge that it is entirely premature to come to any definite conclusions upon a point of such deep perplexity as the question of the possibility of absolute cure in locomotor ataxy. Physician and patient alike must beware from falling into the temptation of conceiving exaggerated hopes as to the final results, in the presence even of effects as incontrovertible as those testified by so many able and critical observers."—*British Medical Journal*, March 9, 1889.

PUERPERAL FEVERS AND SEPTICÆMIA.—We copy the following from a letter by ROBERT BARNES, M.D., in the *British Medical Journal*, March 16, 1889.

By the term "puerperal fever," we must understand "fever in a puerpera."

As fevers of various kinds may assail non-puerperal persons, so they may assail puerperæ. We must, therefore, abandon the vain attempt to find one definite puerperal fever, and we must recognize the clinical truth that there are puerperal fevers.

There is, however, one constant underlying condition of all the puerperal fevers; that is, the puerperal constitution. This forms the soil in which all the disturbing influences work, in which noxious matters, from whatever source, internal or external, germinate, and which, without always destroying the individual properties of the foreign poisons, imparts to all some common features. It is also highly probable that under the mutual reactions of ingested poison and the puerperal constitution, new innominate poisons may be engendered.

The puerperal fevers may be classified under the two great divisions of autogenetic and heterogenetic. *a.* The autogenetic fevers are 1, the simple excretory puerperal fever, the result of endo-sepsis, or the arrest of the excretion of waste stuff of involution; it is especially prone to arise in damp cold weather. This form complicates all other fevers, even the septicæmic form; 2, the fever resulting from absorption of foul stuff from the parturient canal, either from the unbroken mucous surface, or by the open mouths of vessels, or from traumatic surfaces; this is autoseptic. This form is also likely to complicate other fevers; 3, this, the proper septicæmic puerperal fever, is revealed under the forms of metritis, peritonitis, pelvic cellulitis,

thrombosis, and general toxæmia. *b.* The heterogenetic fevers are due to a poison from without. These may be divided into 1, the cadaveric poison, which wrought such havoc before the days of Semmelweis, the septic stuff from other puerperæ, animal poisons of obscure origin; and 2, the known zymotic poisons, as small-pox, scarlatina, typhoid, diphtheria, erysipelas.

All the various modes of infection recognized as acting in non-puerperal subjects act in the puerpera; but she is especially open to invasion by direct inoculation by the parturient tract, and empoisonment by all routes is greatly favored by the peculiar activity of the absorptive function.

Can any one of the foregoing propositions be disputed? Are they not the direct expression of precise objective clinical observation, freed from the bias of subjective idols? What then becomes of the dogma of septicæmia pure and simple?

I have shown that this dogma is not only false, but therefore dangerous. To see in septicæmia the only evil is to fix all therapeutical energy upon what is commonly understood as antiseptic treatment. This is the course advocated by the more earnest of the septicæmic school. Without affirming that they recognize no other remedies, it is not too much to say that they carry the practice of antiseptic irrigations to an irrational extreme, and to the comparative neglect of other important indications. They assume, on the other hand, that those who deny the exclusive dogma of septicæmia are stricken with therapeutical impotence. "The doctrine of auto-genesis," exclaims Parvin, "is a confession of ignorance, the creed of fatalism, the cry of despair. . . . the very pessimism of obstetric medicine." Big words, full of sound, and little else! The truth is, that those who take a broad, comprehensive catholic view of the many factors in the etiology, and constitution of puerperal fevers, take also a broader, more philosophical, and more rational grasp of the principles of treatment, and especially of prophylaxis. I hope I may be pardoned for saying that in no text-book of obstetrics is antiseptic treatment more carefully described than in that which bears my name.

I may fitly conclude with citing from a paper on "Antiseptic Midwifery and Septicæmia in Midwifery." "So far as antiseptic appliances are concerned, they can strictly only be regarded as subsidiary means in the carrying out of the great principle that lies at the bottom of all good obstetric practice—namely, to screen the lying-in women from those poisons and other noxious influences which threaten her from within and from without. It is not, therefore, desirable to devote special or separate attention to what, after all, is only a part of a great therapeutical scheme. The essential thing is to take such a large view of the physiological and pathological processes as

will give the right indications to call upon each and all of the therapeutical agents at our command. To fix the mind too intently upon any one of these agents is to incur the danger of neglecting others, and of losing sight of the principle which ought to guide the application of all, as one force directed to one end."

A NEW ANTIDOTE FOR MORPHINE.—In the *Internationale Klinische Rundschau* for January 27, 1889, PROFESSOR ARPAD BOKAI recommends picrotoxine as an antidote for morphine, on the ground that it exerts an antagonistic action to morphine on the respiratory centres; for, while morphine tends to paralyze these centres, picrotoxine exerts a powerful stimulating effect. Since, therefore, death in morphine poisoning is usually attributable to paralysis of the respiratory centre, on this ground alone picrotoxine should be indicated as a valuable antidote. Further, morphine may produce such rapid reduction in blood-pressure as to endanger life; while picrotoxine, on the other hand, is a powerful stimulant to the vaso-motor centre, and is in this respect also an antagonistic to morphine. Professor Bokai adds that the action of morphine on the cerebrum is directly exposed to that exerted by picrotoxine. Finally, Professor Bokai suggests that the previous administration of a small dose of picrotoxine might reduce the danger of asphyxia in chloroform narcosis.—*Therapeutic Gazette*, March 15, 1889.

AN EARLY SIGN OF ENDOCARDITIS.—DR. DUCLOS, of Tours, writing in the *Revue Générale de Clinique et de Thérapeutique*, January 17, 1889, records a fact of his experience, in regard to commencing endocarditis, which may possibly be of value as an aid in the early recognition of this affection. While in charge of a military hospital he chanced to have a large number of young soldiers suffering from acute articular rheumatism under his care. One day, while listening to the heart-sounds of one of these patients, his finger being at the same time on the radial pulse, he was struck with the want of synchronism between the ventricular contraction and the pulsation at the wrist, the latter being delayed about two-thirds of a second. The following day a systolic apex murmur was heard. Thinking that this retardation of the radial pulse might have some significance in connection with the subsequent development of endocarditis, he took pains to note its occurrence in other cases, and found that it was followed by a murmur at the end of from twenty-four to thirty-six hours in every instance. These observations were extended over a period several years, and were confirmed in a number of cases by Professors Parrot and Potain.

The author has no conclusive theory to offer in

* American Journal of Obstetrics, 1882.

explanation of this phenomenon, but he thinks that it is probably due to a weakening of the muscular fibres subjacent to the endocardium. He compares it to the weakened respiratory murmur frequently observed at the beginning of a pleurisy a few hours before a friction sound is developed or effusion takes place. It would be interesting to learn whether this want of synchronism is present in the beginning of endocarditis arising in the course of other diseases, but the author has few observations bearing on this point to record. He has noted it, however, in two cases of typhoid fever and in three of erysipelas, in which endocarditis, subsequently developed.

Dr. Duclos draws some practical conclusions, in regard to treatment, based upon the early recognition of the affection, and he believes that he has succeeded in arresting the disease, in certain cases, before irreparable injury had resulted. His plan is to apply immediately a large flying blister over the præcordial region, or, in default of this, a mustard-plaster, dry cups, or leeches. He increases also the dose of the remedy that is being at the same time given for the rheumatism. Of course, a strict enforcement of recumbency is also indicated.

When we consider the importance of an early diagnosis of endocarditis, and the possibility of arresting the disease if detected in its incipency, this alleged premonitory symptom of the affection is worth testing in order to determine the amount practical utility that it may possess.—*Medical Record*, March 30, 1889.

WHEN TO PRESCRIBE DIGITALIS.—Notwithstanding the increasing additions to the list of so-called cardiac medicaments digitalis still holds its position as the most certain and most widely used; but in order to derive all the good possible from it is necessary to understand clearly the indications, and not to give it indiscriminately, as is too often done. MR. HUCHARD has set forth these indications very clearly in his recent work, "When and How Should Digitalis be Prescribed."

In order to understand clearly the indications and counter-indications, the valvular affections of the heart must be divided into four stages or periods. The first is the period of *ensystole*. During this time the lesion is compensated, and nothing should be done in the way of medication; all our efforts are to be confined to maintaining good hygiene. Digitalis is useless.

During the second period, that of *hypersystole*, the contractions are violent, and compensation is exaggerated. Hygiene still plays an important part, and the cardiac sedatives, aconite, arsenic and the bromides, are indicated; digitalis is injurious.

The situation is entirely different in the period of *hyposystole*, or temporary asystole. The cardiac muscle and vessel become asthenic. This is the

stage of cedemas, congestion of the viscera, dropsies; the heart beats softly and feebly, etc. Digitalis is now of the greatest service; it is here triumphant.

Finally, in the period of *asystole* or *amyocardia* the cardiac muscle is profoundly degenerated; there is paresis of the heart, the *definitive cardioplegia* of Gubler. Digitalis is still sometimes useful, but it may in time become inefficacious, and occasionally it is injurious. Caffein in large doses is here sometimes very valuable.

Huchard considers a maceration of the drug as the best form for administering it. He does not give the infusion, which is preferred by some physicians, for, when it is necessary to act quickly, we cannot wait for twelve hours, which time is required for macerating. This is the method for making the maceration:

R. Leaves of digitalis, in powder . . . 25 to 40 cent.
Cold water 300 grams.

Macerate for twelve hours, and filter carefully, in order to avoid the retention of a certain amount of the powdered digitalis, which is capable of producing nausea and vomiting by its irritant action upon the mucous membrane of the stomach. The infusion may be sweetened with any agreeable syrup.

This maceration should be taken in five or six doses during the day, between meals; the digitalis should be prescribed in diminishing doses; thus, 40 centigrams the first day, 30 cgr. the second, 20 cgr. the third, etc. As a rule, the digitalis should be suspended after four or five day's use. (*Journal de Médecine et Chirurgie Practiques*).—*New Orleans Medical and Surgical Journal*, March, 1889.

MAGISTERIUM BISMUTHI IN INFANTILE SUMMER DIARRHŒA.—In the St. Petersburg weekly *Russkaia Meditzina*, No. 30, 1888, DR. A. PÜGINOFF says that subnitrate of bismuth constitutes the most reliable remedy for epidemic summer diarrhœa in nurslings. He gives the drug in large doses, feeling sure that a pure preparation is excreted *per anum* wholly and in an unaltered state. Thus, to an infant of 4½ months, he administers 1½ or 2 grains every 2 hours. The main advantages of the subnitrate over all other means are stated to be these: 1. The drug does not give rise to any untoward accessory symptoms. 2. It is readily taken and perfectly well borne. 3. It acts on the intestinal tract both as a sedative and as an antiseptic.

THE TREATMENT OF CORNS.—DR. C. McDERMOTT writes to the *British Medical Journal* that a saturated solution of salicylic acid in flexible collodion is an excellent remedy for corns. The corns should be painted twice a day. It takes about twelve days for their complete removal.

THE

Journal of the American Medical Association

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00

SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, APRIL 13, 1889.

CLIMATIC INFLUENCE IN PHTHISIS.

The reception of a neat reprint edition of the excellent paper on the "Preferable Climate for Phthisis," read at the Ninth International Medical Congress, Washington, 1887, by DR. CHAS. DENISON, Denver, reminds us that there are few questions of more practical importance to the general practitioner, than the one so frequently asked by his patient affected with pulmonary phthisis, *i.e.*, Will a change of climate benefit me and if so, where shall I go? In assuming to answer the anxious inquirer by simply saying, "You better go to the mountains, or to California, Colorado, Texas or Florida, or in more general terms, to a mild, dry, and elevated region," more patients have been sent astray than in any other department of medical practice. That a large proportion of cases of chronic diseases of the lungs, including tubercular phthisis can be arrested, and many of them permanently cured by residence in a proper climate, commenced at the proper stage of the disease, has been proved by ample experience. The possession of accurate knowledge concerning the elements that give special character to climate and their influence on the functions of the human body, and the ability to ascertain the extent and stage of progress of the morbid conditions in each patient are the essential qualifications needed by every practitioner, who would do justice to those who depend upon him for advice. The studies necessary to gain the knowledge mentioned as constituting the first part of these

qualifications do not hold as prominent a position in the curriculums of study, either preliminary or medical, devised for those who would enter the ranks of the medical profession as they should. Therefore Dr. Denison well says in the beginning of his paper: "Hitherto, the chief obstacles in the way of right conclusions have been: 1. Ignorance of the exact nature and progress of the disease, and 2, A lack of appreciation of the relative importance of different climatic attributes in its arrest."

A thorough knowledge of physics, topography and geology should constitute an essential part of the qualifications needed for entering upon the study of medicine; and the application of the facts and physical laws furnished by these branches, in the study of physiology, pathology, and etiology, in the medical course, should be much more systematic and thorough than has hitherto been done in most of our medical colleges. The word *climate* is used to indicate the sum or aggregate of qualities possessed by the atmosphere in any given locality and at any specified season of the year. The chief elements that determine the quality of a climate are 1. purity of the air or freedom from foreign ingredients; 2. temperature; 3. dryness; 4. rarefaction as determined by altitude; 5. the amount of sunshine; 6. electricity; 7. variability as opposed to uniformity; and 8. motion or wind. All these climatic elements are influenced directly or indirectly by the topography or configuration of the earth's surface, the composition of the soil and superficial strata in each locality, and the presence or absence of large bodies of water. The two elements, purity and rarefaction bear a direct ratio to altitude, while the temperature, dryness and amount of sunshine and electricity are influenced much by the altitude, latitude and composition and configuration of the earth's surface. An uneven, hilly or mountainous surface composed largely of sand, gravel or rocks, not only admits of free drainage, retaining less water for evaporation, but it both absorbs and radiates heat with rapidity; while a level surface composed of a liberal intermixture of clay, with the latitude and altitude the same, retains the water for evaporation, thereby giving to the superimposed atmosphere a much higher degree of moisture, while the absorption and radiation of heat are much slower. As the amount of sunshine and electricity depend

largely upon the amount of atmospheric moisture and currents with variability of temperature, it is readily seen that the composition and configuration of any locality must be taken into consideration in estimating the special characteristics of its climate. For the same latitudes we may deduce the following climatic law: The purity, coolness, dryness, rarefaction and sunshine will be in direct proportion to the altitude, and the unevenness and porosity of the surface; while the electricity and direction and velocity of the winds will be modified by the proximity of mountain ranges or large bodies of water. The influence of the several climatic elements mentioned in this law on the functions of respiration, circulation, elimination and nutrition, and their bearing or adaptability to the treatment of different stages of pulmonary phthisis will be briefly considered in the next issue of *THE JOURNAL*. In the meantime we wish every practitioner would read the paper of Dr. Denison, and as much of similar literature by other authors as he can find.

INTUBATION IN DIPHTHERITIC LARYNGITIS.

In the *New York Medical Journal*, March 9, 1889, DR. DILLON BROWN gives the result of 200 cases of intubation of the larynx for diphtheritic croup, performed by himself, and in addition collates from the published statements of 165 other operators in America, Germany, France, England, Spain and Canada, an aggregate of 2,168 cases, making, with his own, a total of 2,368 cases, by 166 operators. Of the whole number 647, or 27.3 per cent., recovered. Of the 200 cases operated on by Dr. Brown 54, or 27.3 per cent., recovered. He mentions having seen 23 additional cases that recovered without operation, and 4 that died, in which intubation was urged but refused. The alleged causes of death in 144 of the fatal cases intubated by Dr. Brown were: extension of the disease to the bronchi, 63; sepsis, 24; pneumonia, 15; exhaustion, 11; nephritis and convulsions, 11; sudden heart failure, 8; extension and pneumonia, 7; asphyxia 2; tuberculosis, 1; general paralysis, 1; and scarlet fever and sepsis, 1.

The general table of 2,368 cases given by Dr. Brown includes 158 cases reported by Dr. F. E. Waxham, of Chicago, with 43 recoveries. In a clinical lecture by Dr. Waxham, published in the

North American Practitioner, March, 1889, he gives 30 additional cases, with 17 recoveries, making the total number of his cases 188, with 60 recoveries, or 31.3 per cent. Both Drs. Brown and Waxham report a higher ratio of recoveries in their later than in their earlier operations. This is attributed to the acquisition of greater skill by practice in the insertion and removal of the tube, and in guarding against accidents and complications. May not an important part of the higher ratio of recoveries be the result of an earlier resort to intubation without waiting until the patient is in such imminent danger of suffocation or fatal exhaustion, as is usual before obtaining permission to perform tracheotomy? And yet up to the present time the tabulated statements of both intubation and tracheotomy differ but little in the relative ratio of recoveries and deaths; and we have no means of knowing how many of those subjected to these operations would have recovered if no operation had been performed. The impression made upon the popular mind is, that every case recovering after either operation is a life saved by the operative procedure that would have been otherwise certainly lost. Such a conclusion, however, is not justified by a fair consideration of all the facts. To ascertain the real value of either intubation or tracheotomy in true diphtheritic croup we must be able to compare the results of the treatment of an adequate number of cases, in the same season, of similar age and in similar sanitary surroundings without operative procedures, with those subjected to the most skillful operative methods.

As stated above, Dr. Brown mentions having seen 27 cases that were treated without either intubation or tracheotomy, of which 23 recovered and 4 died. Another writer mentions 13 cases that were so bad operative procedures were deemed useless, and yet 4 of them recovered without such aid. Both Drs. Brown and Waxham concede the marked benefit derived from the efficient use of the bichloride of mercury as an internal remedy. The former states that of the last 115 cases on which he had practiced intubation 50 had been treated medicinally without the bichloride and 12, or 24 per cent., recovered. The other 65 were treated with the bichloride in doses of gr. $\frac{1}{80}$ to gr. $\frac{1}{40}$ every hour, and 24, or 36.9 per cent., recovered. In the foregoing comments we do not desire to discourage the judicious resort to operative

procedures in diphtheritic laryngitis when suffocation is imminent from the direct obstruction of the larynx, but simply to suggest caution in resorting to surgical methods too indiscriminately, and to the neglect of the most efficient medical treatment in the early stages of the disease.

THE OFFICIAL PRELIMINARY PROGRAMME.

We publish to-day the programme of the general sessions of the coming meeting of the Association. A better selection of those to deliver general addresses could not have been made. The reports from the officers of Sections also promise a most interesting and instructive series of papers for them. Excellent arrangements have been made for the meetings of the Sections. The social part of the meeting has not been forgotten. One of the pleasantest features planned by the Committee of Arrangements will be a steamboat excursion on the fourth day of the sessions, given by the Rhode Island Medical Society, to Providence, when the Rhode Island Hospital and Butler Hospital for the Insane will be inspected, and an old-fashioned clambake will be enjoyed at a shore resort on the way back to Newport.

EDITORIAL NOTES.

TEXAS STATE MEDICAL ASSOCIATION.—The next annual meeting of this Association will be held in San Antonio, commencing April 23, 1889.

THE OFFICIAL NOTICE OF THE NEXT ANNUAL MEETING of the American Medical Association, by the Permanent Secretary, will be found in the columns for Association News in the present number.

PHILADELPHIA POLYCLINIC.—The following recent additions and changes have been made: A chair of Diseases of the Mind and Nervous System and a chair of Obstetrics and Diseases of Children have been established; Professor S. Weir Mitchell has been appointed to the first and Edward P. Davis to the second. Dr. B. Alex. Randall has been appointed to the chair of Diseases of the Ear, in place of Dr. Burnett, resigned.

CHICAGO MEDICAL COLLEGE CHANGES.—At a recent meeting of the Trustees and Faculty, the regular annual college term was extended to seven months. Dr. G. W. Webster, who had given the course on Physiology during the past year, was

unanimously elected to the professorship; and an *optional* full four years' course was recommended and will appear in the annual announcement.

THE WOMAN'S HOSPITAL MEDICAL COLLEGE OF CHICAGO held its nineteenth annual Commencement on the 2d inst., at which the degree of Doctor in Medicine was conferred upon 25 young women. The Rush Medical College had graduated 127; the College of Physicians and Surgeons 48; and the Chicago Medical College 46, young men; making the total number of graduates from the four regular medical colleges of Chicago for 1889, 246.

ARMY MEDICAL BOARD—VACANCIES IN THE MEDICAL CORPS.—In the columns for miscellaneous notices and news items of the present number, will be found an official notice from the Surgeon-General of the U. S. Army, stating that an Army Medical Board will be in session in New York City from May 1 to 31, 1889, for examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies. We are informed that there are seven vacancies existing at present in the Medical Corps, to which another will be added in July by the retirement of a medical officer, making eight appointments to be recommended by the Board. Among the many recent graduates of the medical schools and hospitals of our country, there must be some ambitious for military life with its duties and honors, and if so, they cannot have a more favorable opportunity for presenting themselves than the one indicated in the Surgeon-General's notice alluded to above.

THE ETIOLOGY OF CONSTITUTIONAL IRREGULARITIES OF THE TEETH has been very carefully studied in some recent papers by Dr. EUGENE S. TALBOT, of Chicago, the papers having been recently published in pamphlet form. He shows that constitutional irregularities of the teeth prevail to a greater extent among the idiotic, deaf and dumb, and blind, than among an equal number of strong and healthy persons, and claims that arrest of development is the result of malnutrition during embryonal and infantile growth, influenced by consanguineous marriages, scrofula, drunkenness in parents, prenatal influences, intra-uterine education, and constitutional diseases, or of inflammation of the osteophytic membranes *in utero*. Irregularities of the teeth, he says, do

not exist among normal or large jaws, while among those who have abnormally small jaws, the majority have irregular teeth. In a second paper Dr. Talbot makes some very strong arguments in favor of arrest of development of the maxillary bones being due to race crossing, climate, and soil. It is shown that these irregularities of the teeth and jaws are not found in pure races nor in aborigines, while they are common in mixed races, and more common in the offspring of races differing widely from each other. Conditions of life, climate, soil, and food, play an important part in these irregularities, when taken in connection with race-mixture. Dr. Talbot then goes on to consider the subject in detail, and his papers are well worth careful study.

HYDRONEPHROSIS RELIEVED BY POSITION.—MR. R. H. A. HUNTER reports in the *British Medical Journal*, the case of a woman with a painful swelling in the right side, which had been increasing in size for three weeks. This was diagnosed as a case of hydronephrosis, and the patient was directed to rest in bed with the pelvis elevated up on pillows. After remaining in this position for a few hours the patient suddenly felt a desire to pass water, and passed about a pint. In a short time she again passed about a pint and a half, and the swelling had disappeared.

ASSOCIATION NEWS.

American Medical Association. Fortieth Annual Meeting.

To be held in Newport, R. I., June 25, 26, 27 and 28, 1889.

The Fortieth Annual Session will be held in Newport, R. I., on Tuesday, Wednesday, Thursday and Friday, June 25, 26, 27 and 28, commencing on Tuesday, at 11 A.M.

"The delegates shall receive their appointment from permanently organized State Medical Societies, and such County and District Medical Societies as are recognized by representation in their respective State Societies, and from the Medical Department of the Army and Navy, and the Marine-Hospital Service of the United States.

"Each State, County and District Medical Society entitled to representation shall have the privilege of sending to the Association one delegate for every ten of its regular resident members,

and one for every additional fraction of more than half that number: *Provided*, however, that the number of delegates for any particular State, territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the Association."

Members by Application.—Members by Application shall consist of such members of the State, County and District Medical Societies entitled to representation in this Association, as shall make application in writing to the Treasurer, and accompany said application with a certificate of good standing, signed by the President and Secretary of the Society of which they are members, and the amount of the annual membership fee, five dollars. They shall have their names upon the roll, and have all the rights and privileges accorded to *permanent members*, and shall retain their membership upon the same terms.

The following resolution was adopted at the last session: That in future, each delegate or permanent member shall, when he registers, also record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers.

Secretaries of Medical Societies, as above designated, are earnestly requested to forward, *at once*, lists of their delegates.

Also, that the Permanent Secretary may be enabled to erase from the rolls the names of those who have forfeited their membership, the Secretaries are, *by special resolution*, requested to send to him, annually, a corrected list of the membership of their respective Societies.

AMENDMENTS TO THE CONSTITUTION.

Amendment proposed by Dr. N. S. Davis, of Illinois:

"The General Committee shall be composed of two members from each State and Territorial Medical Society entitled to representation by delegates in the Association, and from the Medical Departments of the U. S. Army, Navy, and Marine-Hospital Service. They shall be chosen by the members registered and present at each annual meeting from each State and Territory, and from the Medical Corps of the U. S. Army, Navy and Marine-Hospital Service, acting separately, on the third day of each annual meeting; each delegation reporting the names of the members chosen to the Permanent Secretary of the Association on the same day, that they may be announced by him at the opening of the morning session of the fourth day. At the first election each delegation shall choose two members of the General Committee, one of whom shall serve one year, and the other two years, and at each annual election thereafter one member shall be chosen to serve for two years, thus making the term of office of members of the General Committee two years. It shall be

the duty of the General Committee thus constituted, to organize by choosing annually a Chairman and Secretary, and such subcommittees as may be found necessary to facilitate the work that may be assigned to it; to meet annually at the place and on the day preceding each annual meeting of the Association, and as often during that week as may be necessary; to nominate, on the third day of each annual meeting, all the general officers of the Association (none of whom shall be members of its own body), the members of the Committee of Arrangements, the Committee on Necrology, seven members of the Judicial Council, and three members of the Board of Trustees for Publication, for election by the Association; to recommend the place and time of holding the next annual meeting; and to consider and report upon all subjects that may be referred to it by vote of the Association. The presence of one-third of the whole number of members elected to the General Committee shall constitute a quorum for the transaction of business. If, at any annual meeting of the Association, it shall be found at the close of the general meeting of the first day that a quorum of the General Committee is not present, it shall be the duty of the President and Permanent Secretary to fill the vacancies in the Committee temporarily by selections from the lists of delegates registered as present from the States to which the vacancies belong."

Should this provision be adopted by the Association, the Permanent Secretary should be authorized to substitute the name "General Committee" for "Nominating Committee," wherever the latter occurs in other parts of the Constitution and By-Laws.

Amendment offered by Dr. J. M. Keller, of Arkansas:

"To change the By-Law whereby the officers of the Sections are elected by the Sections."

Amendment offered by Dr. N. S. Davis:

"Strike out the last clause of paragraph VII, relating to individually affixing names to the Constitution and Regulations of this Association."

Amendments offered by Dr. H. N. Moyer, of Illinois:

"There shall be created a Section of Pharmacy and Materia Medica, which shall have its own autonomy, in like manner as the Section in Dental and Oral Surgery. Reputable members of the State Pharmaceutical Associations shall be eligible as members of the same on presentation of credentials from their State Secretary, but shall have no voice in the general sessions of the Association.

"The Section of Surgery shall hereafter be denominated the Section of Surgery and Gynecology.

"There shall be created a Section of Anatomy and Physiology.

"The Section of Obstetrics and Diseases of Women shall be abolished.

"The Section of Diseases of Children shall hereafter be denominated the Section of Obstetrics and Pædiatrics.

"The Section of Dermatology and Syphilography shall hereafter be denominated the Section of Dermatology and Genito-urinary Diseases.

"The Section of Medical Jurisprudence shall hereafter be denominated the Section of Mental and Nervous Diseases.

"The Section of State Medicine shall hereafter be denominated the Section of State Medicine and Medical Jurisprudence.

"The Section of Practice of Medicine, Materia Medica and Physiology shall hereafter be denominated the Section of Internal Medicine."

Committee of Arrangements: H. R. STORER, Chairman, Newport, R. I.

WM. B. ATKINSON, M.D., Per. Sec'y.

SECTIONS.

"The Chairman of each Section shall prepare an address on the recent advancements in the branches belonging to his Section, including such suggestions in regard to improvements in methods of work, and present, on the first day of its annual meeting, the same to the Section over which he presides. The reading of such address not to occupy over forty minutes. . . ."—*By-Laws*.

Practice of Medicine, Materia Medica and Physiology.—Dr. F. C. Shattuck, Chairman, Boston, Mass.; Dr. G. A. Fackler, Sec'y, Cincinnati, O.

Obstetrics and Diseases of Women.—Dr. W. H. Wathen, Chairman, Louisville, Ky.; Dr. A. B. Carpenter, Sec'y, Cleveland, O.

Surgery and Anatomy.—Dr. N. P. Dandridge, Chairman, Cincinnati, O.; Dr. W. O. Roberts, Secretary, Louisville, Ky.

State Medicine.—Dr. J. Berrien Lindsley, Chairman, Nashville, Tenn.; Dr. S. T. Armstrong, Sec'y, U. S. M.-Hosp. Service.

Ophthalmology.—Dr. George E. Frothingham, Chairman, Ann Arbor, Mich.; Dr. G. C. Savage, Sec'y, Nashville, Tenn.

Laryngology and Otology.—Dr. W. H. Daly, Chairman, Pittsburg, Pa.; Dr. E. Fletcher Ingals, Sec'y, Chicago, Ill.

Diseases of Children.—Dr. J. A. Larrabee, Chairman, Louisville, Ky.; Dr. C. J. Jennings, Sec'y, Detroit, Mich.

Oral and Dental Surgery.—Dr. F. H. Rehwinke, Chairman, Chillicothe, O.; Dr. E. S. Talbot, Sec'y, Chicago, Ill.

Medical Jurisprudence.—Dr. James G. Kiernan, Chairman, Dunning, Ill.; Dr. T. B. Evans, Sec'y, Baltimore, Md.

Dermatology and Syphilography.—Dr. L. D. Bulkley, Chairman, New York; Dr. W. T. Corlett, Sec'y, Cleveland, O.

A member desiring to read a paper before a Section should forward the paper, or its *tittle* and

length (not to exceed twenty minutes in reading), to the Chairman of the appropriate Section at least one month before the meeting.—*By-Laws*.

OFFICIAL PRELIMINARY PROGRAMME.

FIRST DAY, TUESDAY, JUNE 25.

Assemble in Music Hall, Bellevue Avenue, at 11 A.M.

Meeting called to order by Dr. Horatio R. Storer, Chairman Committee of Arrangements.

Prayer. Rev. Thatcher Thayer, D.D. (Cong.), the senior clergyman of Newport.

Reading names of delegates and others thus far registered, by Permanent Secretary, Dr. Wm. B. Atkinson, of Philadelphia.

Announcement of the programme for the day, of halls for the Sections, that papers not already listed be handed to Chairman of Committee of Arrangements for reference to appropriate Sections, that Judicial Council meet at 2 P.M. at Newport Casino, and that, to prevent the usual haste and confusion, the delegates from the different States hold their separate meetings, to elect members of the Nominating Committee, at 9:30 A.M. Wednesday, at the Music Hall, half an hour before the general session.

Addresses of Welcome by Hon. Thomas Coggeshall, Mayor of Newport; by Dr. Henry E. Turner, of Newport, President of State Board of Health, on behalf of the profession of Newport; and Hon. James H. Eldredge, M.D., of East Greenwich, ex-President of Rhode Island Medical Society, on behalf of the profession of Rhode Island.

Presidential Address, Dr. W. W. Dawson, of Cincinnati, Professor of Surgery in the Medical College of Ohio.

SECOND DAY, WEDNESDAY, JUNE 26.

Meeting called to order by the President of the Association, at 10 A.M.

Prayer.

Reading continuation of registry list, of programmes for the day, and call for reports as to elections upon Nominating Committee.

Address on Medicine, by Dr. Wm. Pepper, of Philadelphia, Provost of the University of Pennsylvania.

Report of the Trustees of *THE JOURNAL*.

Consideration of proposed Amendments to the Constitution.

Announcement of Nominating Committee, and that it will report at close of Thursday's general session.

THIRD DAY, THURSDAY, JUNE 27.

Meeting called to order by the President, at 10 A.M.

Prayer.

Reading of continuation of registry list, and of

programmes for the day, and notice that all new business must be introduced at to-day's session.

Address on Surgery, by Dr. Phineas S. Conner, of Cincinnati.

Introduction of New Business.

Report of Treasurer.

Report of Librarian.

Report of Rush Monument Committee.

Report of Nominating Committee.

FOURTH DAY, FRIDAY, JUNE 28.

Meeting called to order by the President at 9 A.M.

Prayer.

Reading of continuation of registry list, and of programmes for the day.

Address on State Medicine, by Dr. W. H. Welsh, of Baltimore.

Report of Necrologist.

Reading names of newly elected officers of the Sections and Delegates to Foreign Societies.

Introduction of the in-coming by the retiring President.

Response by the former.

Final Adjournment.

Special Attention is called to the following Rules of the Association :

It shall be the duty of every member of the Association who proposes to present a paper or report to any one of the Sections, to forward either the paper, or a *title* indicative of its contents, and its *length*, to the Chairman of the Committee of Arrangements at least one month before the annual meeting at which the paper or report is to be read. It shall also be the duty of the Chairman and Secretary of each Section to communicate the same information to the Chairman of the Committee of Arrangements concerning such papers and reports as may come into their possession or knowledge for their respective Sections, the same length of time before the annual meeting. And the Committee of Arrangements shall determine the order of reading or presentation of all such papers, and announce the same in the form of a programme for the use of all members attending the annual meeting. Such programme shall also contain the rules specified in the By-laws and Ordinances concerning the consideration and disposal of all papers in the Sections.

No report or other paper shall be entitled to publication in the volume for the year in which it shall be presented to the Association, unless it be placed in the hands of the Committee of Publication on or before the first day of July. It must also be so prepared as to require no material alteration or addition at the hands of its author.

Every paper or address received by this Asso-

ciation, or by a Section, and ordered to be published, and all reports of Committees, and all plates or other means of illustration, shall be considered the exclusive property of the Association, and shall be published and sold for the exclusive benefit of the Association.

ORDINANCES.

Resolved, That the several Sections of this Association be requested, in the future, to refer no papers or reports to the Committee of Publication, except such as can be fairly classed under one of the three following heads, namely: 1. Such as may contain and establish *positively* new facts, modes of practice, or principles of real value. 2. Such as may contain the results of well-devised original experimental researches. 3. Such as present so complete a review of the facts on any particular subject as to enable the writer to deduce therefrom legitimate conclusions of importance.

Resolved, That the several Sections be requested, in the future, to refer all such papers as may be presented to them for examination by this Association, that contain matter of more or less value, and yet cannot be fairly ranked under either of the heads mentioned in the foregoing resolution, back to their authors with the recommendation that they be published in such regular medical periodicals as said authors may select, with the privilege of placing at the head of such papers, "Read to the Section of the American Medical Association on the day of 18 ." (Vide *Transactions*, vol. xvi, p. 40.)

Resolved, That no report or other paper shall be presented to this Association unless it be so prepared that it can be put at once into the hands of the Permanent Secretary, to be transmitted to the Committee of Publication. (Vide *Transactions*, vol xvii, p. 27.)

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting, December 12, 1888.

THE PRESIDENT, THOMAS C. SMITH, M.D., IN THE CHAIR.

DR. A. A. HOEHLING read the history of a case of

PHTHISIS PNEUMONICA ET LARYNGITIS CHRONICA.

(See page 481.)

DR. BERMAN said he was much interested because in later years other ways of treating laryngeal phthisis have been tried with success—Rosenthal used beech-wood, creasote—published in Berlin four or five months ago—with doses be-

ginning with 1 decigramme; second week 2 decigrammes, continued for a week, increasing 1 decigramme daily each week, until he reached 8 decigrammes daily. He, Dr. Bermann, had treated a severe case with creasote with marked benefit. Another treatment of laryngeal phthisis is by lactic acid applications, which he has used and been well satisfied.

DR. HOEHLING said in the case reported they had only made the man comfortable, and had not attempted any specific treatment.

DR. MURRAY said the disease is most distressing when it invades the larynx. He has never found anything to heal tubercular laryngeal ulcer in his own experience—has never tried lactic acid, insufflations of iodoform of idol, morphia, and of iodol and morphia, with good results. He thought the treatment with creasote was suggested about ten years ago by a Frenchman, and not by the Germans as he understood Dr. Bermann to claim.

DR. BERMAN said did not claim that Rosenthal originated creasote treatment.

DR. MCARDLE: Having observed the effect carbolic acid has upon the kidneys wondered if creasote would have any deleterious effect upon kidneys if used as Dr. Bermann had described.

DR. BERMAN: The beech-wood creasote did not seem to act as other species did, and he had noticed no bad effect.

DR. C. E. HAGNER did not believe from his own experience that any tuberculous ulceration of the larynx was curable, and did not believe these ulcers ever existed without sufficient evidence of tuberculosis elsewhere. Thought from present state of knowledge we might as well give up when we saw the bacilli. Had never seen a tubercular laryngeal ulcer cured.

DR. H. L. E. JOHNSON did not think the creasote obtained from beech-wood could act physiologically different from any other variety; there was no difference chemically.

DR. BERMAN: Creasote from beech-wood had a different specific gravity; he did not know the chemical difference.

The discussion on Dr. Schaeffer's paper on

MICROSCOPICAL DIAGNOSIS OF CANCER

was resumed. (See pages 403 and 424.)

DR. BERMAN said did not think it impossible to diagnose cancer of kidney and bladder from cells in the urine; he wished to put himself on record thus. Thought the case ought to be discussed otherwise than as cancer on account of the changes in the pathological condition due to the long presence of the stone in this case.

DR. GRAY was under the impression the diagnosis was encephaloid carcinoma, and the specimen slide which he showed proved to be a squamous epithelioma.

DR. SCHAEFFER said as to the statement of

encephaloid carcinoma he had merely taken the report; he had not seen the specimen at all.

DR. GRAY did not agree with Dr. Bermann. The majority of authorities on the subject deny the existence of a specific and diagnostic cell of cancer, in fact those claiming the existence of such a cell are in a noticeable minority, he could only recall to mind one such, namely, Ziegler, and his statements even not very positive. He did not believe it possible to diagnose cancer of kidney positively, unless fragments of the tumor were found in the urine, then it was possible by seeing the relation of the cells, the mere presence of a multinuclear epithelial cell is not diagnostic of cancer, because such cells may be formed in any inflammation of the urinary tract. A multinuclear epithelial cell simply means that the cell is undergoing division, and represents some form of karyokinesis. Diagnosis of cancer by such cells is simply guess-work. Considered the epithelial cell of cancer as a normal cell in an abnormal place.

DR. BUSEY: Could fragments of sufficient size come through the ureters?

DR. GRAY thought it were possible.

DR. J. F. THOMPSON was obliged to Dr. Gray for the opinion he had expressed. He had spoken the other evening in a general way and from a surgical standpoint. His remarks were meant to apply to cells found floating in the urine, and he had consulted his books and still believes there is no distinctive cancer cell. Dr. Gray had expressed his views so well that he had nothing else to say. He quoted from Holmes' Surgery in support of his argument.

DR. BERMANN differed from the opinions of Drs. Gray and Thompson.

DR. THOMPSON: The stone in the kidney in this case would change the appearance of the epithelial cells to such an extent that it would be utterly impossible to distinguish a cancer cell in it.

DR. SCHAEFFER, in closing, thought the subject had been exhausted, and was much gratified at the amount of discussion his paper had elicited. He had quoted extracts from a work on surgery to show that the attitude of modern surgeons was somewhat against the microscopist. There was such a thing as cancer and that it contained cells. When Dr. Gray said *he*, Dr. G., could not distinguish cancer cells except there be considerable tissue he, Dr. S., would not contradict him, because a gentleman who made such beautiful sections as did Dr. Gray was excusable for not having devoted a sufficient amount of time to the other branch of the microscopist. Dr. Thompson stands with the attitude of the majority of modern surgeons, but it was this theory he, Dr. S., was combatting.

DR. T. E. MCARDLE read the history of the diagnosis, course and treatment of a case of

PERITYPHLITIS.

(See page 406.)

DR. THOMPSON detected deep-seated fluctuation in this case at his first visit and operated on the following morning, making an incision $2\frac{1}{2}$ inches in length, and carefully dissecting down to the peritoneum, and after incising it the pus was discharged, introduced two fingers and examined the appendix, carefully washed out the wound with an antiseptic fluid and left a drainage tube in the wound for a day.

DR. THOMAS E. MCARDLE reported a case of ANEURISM OF THE AORTA, WITH SPECIMEN.

W. A. B., was born in Warren, Ohio, Dec. 15, 1845. He entered the army as drummer boy of Co. C, 84th Regiment Ohio Volunteers, not being old enough to enlist otherwise. In 1863 he entered the volunteer navy as Master's mate in the Mississippi squadron, and was soon promoted to an ensigncy. At the close of the war he was honorably discharged. He suffered with pleurisy during his infantry service at Cumberland, Md., and from malarial fever while on the Tennessee river. On April 19, 1887, he had an attack of "catarrhal strangulation," (?) from which he nearly died. The following August he began to complain of a pain in his chest, and his side and back ached. He was sent to Cleveland to consult the family physician, who diagnosed functional heart trouble and great nervous prostration. He recommended change of scene in a warmer climate, and in November the patient left for Florida, where he remained until driven away by the yellow fever in July, 1888. He seemed much benefited by his residence in Florida, gained flesh and almost completely lost his cough. In the spring, however, he suffered from fever and ague, and quickly lost all he had gained. He came to Washington in July, 1888, but I did not see him until Nov. 18. At that time he was in a very feeble condition. He suffered from a distressing cough, had severe pain in upper part of right side, had no appetite, and slept badly. He would not remain in bed, however, but persisted in getting up and dressing himself. Three days later I saw him again and he seemed not to suffer so acutely. On the morning of Nov. 30, whilst getting out of bed to dress himself, he suddenly expired.

Necroscopy by Dr. D. S. Lamb: Slight deformed prominence of upper, anterior, inner portion of right side of thorax corresponding to sternum and first three ribs. Upper right side of sternum eroded from pressure of aneurism. Right lung compressed by aneurism and by an effusion of blood in pleura which had clotted; firmly adherent to sac. There were also several old pleuritic bands of lower lobe not connected with aneurism; also three firm nodules, size of peas, in margin of lower lobe, two of them darkly pigmented, the other with a calcareous centre. Left

lung cedematous, serum in upper lobe colorless, in lower lobe stained with blood. Heart normal, displaced somewhat downwards by pressure of sac; contained small dark clots. Aorta atheromatous. On right side of ascending portion of arch was an opening 1.5 inch in diameter, leading into an aneurismal pouch, 6×4×4 inches in size, rather spherical in shape, with thin walls, well lined with laminated clot, and closely adherent to upper lobe of right lung and sternum as stated. Extreme right portion of sac had ruptured into right pleura, which contained more than ½ gallon of recent blood clot. Abdominal viscera, especially the liver, depressed well downwards towards pelvis by sac and coagula in pleura; all of them bloodless, otherwise normal. Bladder empty, normal.

Philadelphia County Medical Society.

Stated Meeting, January 23, 1889.

THE PRESIDENT, W. W. KEEN, M.D., IN THE CHAIR.

DR. EUGENE P. BERNARDY read a paper on BINIODIDE OF MERCURY. ITS ANTISEPTIC USE.

When I read my second paper "On the Value of Biniodide of Mercury as an Antiseptic in Obstetrics," before the Philadelphia Obstetrical Society (April 1, 1886), I fully intended leaving the results of my investigations to the medical profession, and let them, by further trial, confirm the correctness of my conclusions.

In reading several papers on antiseptics, the biniodide of mercury is declared insoluble, and therefore difficult to use; in one paper, the cost is the objection, it being stated to be more costly than the mercuric chloride. It is to be sincerely hoped that pecuniary considerations will never interfere in the use of any medicine that will assist in saving a human life. I certainly made myself clear in regard to making the biniodide a soluble salt, and called attention to the addition of *iodide of potassium*.

Dr. P. K. Bolshesolsky,¹ of St. Petersburg, (*Vratch*, 1887, Nos. 10 and 11, page 220), from numerous experiments made by himself in Professor A. P. Dobroslavin's laboratory, concludes that biniodide of mercury is a more powerful and less poisonous antiseptic than corrosive sublimate. A solution of 1 to 4,000 destroys putrefaction-microbes more completely than a corrosive sublimate solution of 1 to 2,000. The biniodide dissolved in a solution of potassium iodide was recently tried, with apparently good results; in three cases of laparotomy, under Professor A. I. Krassowski; for washing the floor a solution of 1 to 4,000 was employed; for disinfecting the

hands, 1 to 2,000; for instruments, from 1 to 2,000 to 1 to 3,000.

In the *Gazette de Gynécologie*, January 1, 1888, Professor Krassowski,² of St. Petersburg, reports a series of eleven laparotomies in which he used as an antiseptic equal parts of biniodide of mercury and potassium iodide in solution. Two deaths occurred from causes not connected with the operation; in each case post-mortem examination showed union of the wound by first intention, and absence of septic inflammation. The mercurial was first used in a strength of 1 to 1,000, which was progressively diminished to 1 to 4,000.

Krassowski concludes that a solution of 1 to 4,000 is an efficient antiseptic, and that this substance is less irritant than the bichloride, and can be applied to the integument in a 5 per cent. solution without producing irritation.

At the recent annual meeting of the Italian Obstetrical and Gynecological Society, Prof. Mangiagalli³ stated that the biniodide of mercury was a more active antiseptic than corrosive sublimate, less dangerous, and less injurious to instruments. The strength of the solution was 1 to 4,000, iodide of potassium, chloride of potassium, or chloride of sodium being used to increase the solubility of the biniodide.

Dr. Rogée-Saint Jean d'Angely (*Semaine Médicale*) states that the biniodide of mercury is not irritant to wounds, and is a more powerful antiseptic than carbolic acid. It has no odor, and an alcoholic solution of 1 to 300 is soluble in all proportions in warm water. Lister's dressing is expensive, and not adapted for use in armies. Since 1885, he has employed exclusively the biniodide with dressings of cotton and gauze, and in 108 operations (32 major) had only one death.

Mr. David Webster,⁴ in the *International Journal of Surgery*, October, 1888, states that the use of bichloride of mercury solutions in ophthalmic surgery has been abandoned at the Manhattan Eye and Ear Hospital, on account of corneal opacities following a certain number of cataract operations wherein those solutions were employed. The surgeon of the Royal Ophthalmic Hospital, about the same time, reported a similar experience. In March last he gave up the bichloride in surgical cases having corneal relations, and now uses Panas' fluid in all iridectomies and cataract extractions. The formula for this fluid is: biniodide of mercury, 1 part; absolute alcohol, 400 parts; pure water, 20,000 parts. The results under this plan have been unusually satisfactory.

In the number of the *Medical News* of June 16, 1888, is a copy of an article from the *Lancet* of

¹ New York Medical Record.

² New York Medical Record.

³ New York Medical Journal.

⁴ The Medical News, Philadelphia, December, 1888.

¹ New York Medical Record.

May 12, 1888, on "A New Antiseptic Soap," which states that, until quite recently a satisfactory soap containing as an antiseptic one of the salts of mercury, has been difficult to prepare on account of the alkaline soap refusing to yield a good lather, oleate of mercury being formed—a compound which has little or no germicidal action. One of the most powerful antiseptics of the mercury salts is, as is well known, the bichloride. Moreover, it is cheap, and easily soluble, but it has the disadvantage of being extremely poisonous, and easily reduced by albuminoid matter with which it combines, thus being rendered inactive. In a paper recently read before the Society of Chemical Industry, in Glasgow, by John Thomson, the solubility of the red biniodide of mercury (which is claimed to be even a more powerful antiseptic than the bichloride) in iodide of potassium has been made use of. It is stated to be permanent, having no tendency to separate, and to be more germicidal in its properties than any other antiseptic soap yet known. Experiments were made to demonstrate this. Sterilized silk threads were suspended in a solution of the biniodide soap for ten minutes, after being saturated with solutions containing well-known microorganisms, amongst which were the streptococcus scarlatinae (Klein), bacillus subtilis, orange sarcina, white bacillus from Tweed water, organisms from putrid urine, the micrococcus of osteo-myelitis, aspergillus nigrescens, spores from various fungi, yellow micrococcus from pus, putrefactive organisms, bacterium termo, and bacillus scarlatinae (Edington). The threads were then carefully washed to remove the soap, and placed in sterilized gelatine in the ordinary way. The threads were controlled by first sterilizing and then plunging into nutrient gelatine; if no growth occurred, they were accepted as being fit for use in the experiment. Washing the threads previously contaminated with organisms, two or three times carefully with distilled water, was shown, by experiment, not to remove the organisms; for, on being placed in the gelatine, growth readily took place. The results, as shown in tables, are very remarkable. In all the experiments, with a few very uncertain exceptions, growth of the organisms was completely prevented, even after the lapse of four days. Similar experiments, made with "carbolate of mercury" soap, showed it to be less powerful as a disinfectant, and much slower in its germicidal action. In experiments carried out in the same manner with antiseptic and ordinary soaps, it was shown that the growth of the organisms, in many cases, was not prevented. The importance of such a soap in medical and sanitary science is very obvious. The biniodide soap has been used in the treatment of eczema with well marked success, especially where the irritation is due to the fermentations

of accumulated secretions, the fermentations being set up by microorganisms. It has also met with similar success when used in parasitic skin diseases, such as favus and ring-worm. As a parasiticide, too, the importance of its application to patients during the period of desquamation in scarlet fever is evident.

The interesting experiments, and the careful manner in which they were carried out, are my excuse for giving the above notes in full. They more than corroborate my opinion of the value of biniodide of mercury as an antiseptic.

As will be seen by the title of my present paper, I have embraced a larger scope than in my two previous papers, which were entirely of obstetrical cases. I have divided my paper: First, history of obstetrical cases; second, history of abdominal abscess intercurrent with typhoid fever; third, surgical cases; fourth, application of the biniodide of mercury wool to the chest in pulmonary troubles; fifth, as a disinfectant in the discharges (alvine) of typhoid fever.

(To be concluded.)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Meeting of the New York County Medical Association—A Paper on Diphtheria by Dr. J. Lewis Smith—Its Etiology—Mode of Propagation—The Specific Cause received chiefly by Inhalation with the Air—Capability of being Communicated from Man to Animals and the Reverse—Means of Prevention by different Modes of Disinfection, etc.

At the last meeting of the New York County Medical Association Dr. J. Lewis Smith read a paper on *The Cause, Mode of Propagation, and Prevention of Diphtheria*. Stating that, although the belief that this disease is of microbic origin is constantly being strengthened by the investigations made in regard to it, it is still a matter of doubt what microbe (or possibly microbes), is the causal agent, he first gave an admirable résumé of the bacteriology of the subject, as developed by various observers during the last twenty years. It was, he said, the conclusions of Drs. Curtis and Satterthwaite, based on their investigations made in 1877 under the auspices of the New York Board of Health, on the etiology and pathology of diphtheria, that evidently prepared the way for the theory that the bacteria themselves are not the direct cause of the disease, but that ptomaines produced by their agency may be. In his most recent utterances Oertel expressed the opinion that, while bacterial organisms gave rise to diphtheria, they did so not by their direct action, but by producing a ptomaine which infects the system

and causes the disease to become constitutional. The microbe itself was mostly confined to the surface, where the action of the virus is widespread and deep. The most eminent pathologists of the present time, said Dr. Smith, do not express any more positive opinions in reference to the action of the specific principle or germ of diphtheria. In the earliest formed membranes Oertel found that many kinds of microbes could be isolated, but practically there are two chief kinds: chain-forming cocci (the streptococcus), and rod-shaped bacteria with rounded extremities (bacilli). In a pseudo-membrane of twelve hours' continuance micrococci abounded mostly on the surface, but in the fibrinous network the bacilli, often in colonies, preponderated. In a specimen of twenty-four hours' duration the upper surface was full of cocci, and below them were bacilli. In concluding this portion of the subject Dr. Smith stated that during the past year Dr. T. Mitchell Prudden, one of the most skilled and trustworthy of our pathologists, has been making a series of careful investigations, the results of which will shortly be published in the *American Journal of the Medical Sciences*, which seem to indicate the strong probability that the specific microbe of diphtheria is a streptococcus.

In treating of its mode of propagation, he said that no fact was better established than that diphtheria does not arise *de novo*. Like eruptive fevers, it is produced by the reception in or upon some part of the system of the preëxisting specific poison. The extreme contagiousness of diphtheria from person to person is well known, and the virus adheres tenaciously to objects on which it happens to alight. The clothing of a patient, even when the disease is of the mildest form, his bedding, the furniture of his room, and the objects which he handles, may for weeks afterward communicate the disease. Dr. Sternberg, in his recent Lomb Prize Essay, also mentions the fact that all damp, foul places, such as sewers, cellars and ill-ventilated spaces under floors, afford conditions favorable for the development and propagation of the diphtheritic virus. The virus, once received, may be propagated in such a place for an indefinite time and, ascending in the vapors which arise from this culture-bed, it is liable to communicate the disease to any one who inhales it. Thus, in New York City, prior to 1850, although foul sewers and unsanitary conditions existed, there was no diphtheria; but in the decade following 1850 this disease was introduced. The germ made its way into the sewers under ground, and now wherever sewer-gas escapes into the domiciles of the city it carries with it the diphtheritic poison. The amazing vitality and power of propagation of this virus are apparent when we reflect that it has permanently infected the New York sewers; so that children in all parts of the city are constantly falling ill with the disease. It is

chiefly by exposure to the emanations from this widely extending culture-bed and to walking cases, often so mild that there is little or no complaint of the throat or impairment of the general health, that diphtheria is so prevalent here. The diphtheritic virus is so subtle, and its vitality and power of propagation so great, that when it is once established in a sewered city the disease can probably never be stamped out, as cholera and yellow fever can.

Diphtheria is commonly communicated by the inhalation of air containing its specific principle, from whatever source the latter may be derived. More rarely the contagion is contracted by means of direct contact with some infected substance, such as a particle of the diphtheritic exudate, muco-purulent secretion from an infected surface, or the blood of a patient. Observations are also accumulating which show that diphtheria, or a disease closely resembling it, occurs among animals, and is sometimes communicated from them to man. Having mentioned several recorded instances of this, he spoke of experiments by different observers which would seem to show that diphtheria can be transmitted from man to animals, and stated that if this were true, it might be inferred that it could likewise be transmitted from animals to man. Such observations and experiments, he went on to say, render it probable that genuine diphtheria, equally fatal, and attended by the same symptoms and anatomical characters as in man, does occur in birds, whether wild or domesticated, and in certain quadrupeds, as the rabbit. Nevertheless, it should be added that certain eminent pathologists, among them Virchow, have doubted the identity of animal and human diphtheria. With our present light upon the subject, he thought it was evident that, since our relations to domestic animals are so close, if they are sick with any disease resembling diphtheria the same precautionary measures should be taken to prevent infection of the family as in human diphtheria. Having stated that milk was a culture medium of various microbes, and that it was probable that it may be the medium of communication of diphtheria, as well as of scarlet fever, Dr. Smith referred to several instances of such apparent communication observed by different writers.

In concluding this portion of the subject he said that the fact that diphtheritic virus may be conveyed long distances without losing its power is now admitted from the many observations that have been made, and the statistics given by Prof. C. W. Earle, of Chicago, in his paper on this subject before the Ninth International Medical Congress, render it probable that the infection is not infrequently transmitted over long distances to salubrious rural localities by means of articles of clothing and merchandise.

In speaking of the prevention of diphtheria he

said that, as regards the small extent of the area of its contagiousness and the persistence and highly infective character of its virus within that area, this disease resembles scarlet fever, and is unlike measles and pertussis, the specific principles of which, although they have a wider contagious area, are more volatile and more quickly dissipated. The most efficient method of preventing the propagation of diphtheria, he went on to say, is the isolation and disinfection of patients, the prompt and thorough disinfection of the apartments occupied by them, with their furniture and bedding, and the exclusion or prevention of all noxious germs. He thought there was reason to believe that disinfection, as commonly practiced, is inadequate, and in this connection he referred to the outbreak of diphtheria in the spring of 1888, which he described in full in the paper on "Diphtheria of the New-born," which he read in May last before the Fifth District Branch of the New York State Medical Association. Here, it will be remembered, the ward was carefully fumigated with the dry vapor of burning sulphur, and after the fumigations there were found in the apartment quantities of living bacteria which were identical with those found in connection with diphtheritic cases previously treated there.

As bearing on this result he read an interesting communication from Dr. E. R. Squibb, the eminent chemist, of Brooklyn, sent in compliance with a request for his opinion; in which the latter stated that in our present state of knowledge all that could be said in regard to sulphur fumigation against infectious material was that it is of doubtful efficacy, with the weight of the highest authorities in bacteriology against it. But to this it must be added that it is still largely used by very intelligent bodies in large institutions, health-boards, etc., where it would not be likely to long maintain an unearned confidence. Dr. Squibb believed that many of the recent failures with sulphur fumigation might perhaps be due to the fact that the fumes were applied dry, while formerly the surfaces of the apartment to be disinfected were all wetted and the pot of burning sulphur was set in water or wet sand, in order that the heat might evaporate off a constant supply of watery vapor. Most, if not all, chemical disinfectants were in a state of tension, ready to change on coming in contact with the matter to which they were applied, and these changes were either by oxidation or di-oxidation; while the moment of greatest power or activity was the moment of change, when, by reacting on infectious matter they passed from a state of tension to a state of rest under new relations. The agency through which these changes almost invariably became operative was the vapor of water. Having explained the chemical reactions which took place when sulphur was burned in a moist atmosphere said that if no moisture was supplied that present in the air

and on the surfaces of the chamber would soon be used up, and the dry gas remain in a comparatively inactive, inefficient condition. The anhydride would necessarily destroy all organisms which breathed in any degree, because breathing surfaces were moist. But in embryonic life protected by shell if the shell were dry the gas would be impotent. Many bacteriologists had admitted that burning sulphur would kill bacteria, but not germs.

Having mentioned that Dr. Llewellyn Eliot had recommended during the continuance of a case of diphtheria the constant evaporation of turpentine over a water bath for the purpose of destroying the virus of the disease, Dr. Smith said that he had himself employed the following prescription for disinfection during his attendance on cases with apparently such good results that he felt encouraged to continue its use:

R
Acid. carbolic
Ol. eucalypti āā f ̄j
Spts. terebinth. f ̄vj
m̄x

Of this, two tablespoonfuls are added to one quart of water, and the mixture placed in a shallow pan. It is to be maintained in a constant state of simmering in the room occupied by the patient.

He next prescribed the disinfection carried out some years ago by Prof. R. Ogden Doremus in the wards of Bellevue Hospital, where pyæmia had been prevalent, by means of chlorine gas, freshly set free; and then went on to say that diphtheria would continue to spread and largely increase the aggregate of deaths unless stringent measures were employed to prevent its propagation by mild walking cases. He saw no way of doing this except by enforced inspection and surveillance of children by parents, nurses and teachers; and he thought that wherever diphtheria was at all prevalent children who had the least sore throat should be excluded from the schools and compelled to remain at home.

In order to adopt adequate preventive measures the fact should also be recognized that third persons who have had no diphtheritic symptoms themselves and infected apparel or furniture may be the medium of communication. After recurring to several recorded instances of this kind, he said that nurses and physicians attending diphtheritic patients should avoid as far as possible the infection of their persons and clothing. Physicians in examining the fauces of children with diphtheria were very liable to receive upon their faces or clothes particles of the pseudo-membrane or infected muco-pus ejected by the violent cough excited by the examination. This might to a considerable extent be avoided by standing one side during the examination, but he himself constantly carried corrosive sublimate with him;

washing his face and hair with a solution of it before leaving the apartment if he suspected that he had received any particle of the infectious material upon his person. Physicians thus exposed should also make use of precautionary measures before going to visit other children.

In conclusion, he referred to the paper read by Dr. H. Caillé, before the New York Academy of Medicine, in January, 1888, on the prevention of diphtheria, in which he stated that occasionally children had a recurrence of diphtheria each spring or autumn. Thinking that such children might perhaps harbor or carry with them the germ of the disease, he selected eight children having a permanent residence who had had repeated attacks of diphtheria, and subjected them to prophylactic treatment. All carious teeth were extracted or filled, and the mouth was rinsed after each meal with a solution of potassium chlorate, sodium chlorate, or sodium borate. The solution was also gargled or drawn through the nostrils. With this treatment the children had escaped the customary diphtheritic attacks during the two years that had elapsed since it was undertaken.

P. B. P.

LETTER FROM BOSTON.

(FROM OUR OWN CORRESPONDENT.)

Twentieth Anniversary of the Dental School of Harvard University.

At Huntington Hall, on March 11, were held exercises commemorating the twentieth anniversary of the Harvard Dental School. A large audience, composed of the alumni and their friends, many of whom were ladies, was present, and was much interested in the literary exercises. Chas. W. Elliot, LL.D., the President of Harvard University, presided in his usual easy and attractive manner, and in his brief words of welcome said that they had come together to felicitate the school and themselves on the work which the school had accomplished in the past twenty years. The school had some trials at its birth. The real difference of opinion was as to whether a dentist should be first educated in medicine and then adopt dentistry as a specialty, or whether a special school should be established for the sole education of dentists. Within the twenty years of the life of this school, there has been a wonderful change in medical education. When this school was founded, a medical student was required to pass four months of the winter *three times*, in attending precisely the same course of medical lectures. Now a medical student is required to pass three years or four, in the study of medicine, and it is true that the dental student of to-day passes as much time in medical study on his way to the dental degree, as the medical student did twenty years ago on his way to the medical degree. I

believe that the Dental Department of Harvard University was the first one to be established in connection with a university of the liberal arts and the learned profession. This example has been followed by other universities, as, for example, the Universities of Pennsylvania, Michigan, Iowa and California. There is here a recognition of the worth and dignity of the calling which, twenty years ago, was lacking. We have also to rejoice together that the dental department of Harvard University has sent into the community a goodly number of highly trained and skillful men. Its instructions have been widely diffused not only over this country, but over Europe as well. The Dental School has more foreign students than all the other departments of the University put together, and these men have returned to their native countries, carrying with them the education of the Harvard Dental School. We believe that we have done good far beyond the limits of our own country.

In his address on the "*Twentieth Anniversary and History of the Dental School*," L. D. Shepard, D.M.D., who was for many years connected with the school, first as Adjunct Professor and then as Professor in the department of Operative Dentistry, said: Twenty years ago but one school, our own, had any connection with a classical University. Now eighteen claim a more or less intimate connection with universities, and five with medical colleges, leaving seven, the same number as twenty years ago, distinctively dental colleges. To-day no college is considered respectable, or its diplomas recognized by the Examining Boards of the States, which graduates a man, no matter how many years of practice he may claim, except after actual attendance upon two courses of lectures in separate years. In important advances, our institution has generally been a leader and always has warmly seconded any advance proposed by another school.

In narrating the history of the origin of the School Dr. Shepard said that the annual address of the Massachusetts Dental Society, in 1865, was delivered by its President, the late Dr. Nathan Cooley Keep, and in accordance with his suggestions, a committee from the Society conferred with a committee from the Medical Faculty. The corporation of Harvard College, after full investigation of the reports, voted, on July 17, 1867, to establish the Dental School, and that the Faculty consist of the Professors of Anatomy, Physiology, Chemistry, and Surgery, in the Medical School; and of three new Professors, of Dental Pathology and Therapeutics, Operative Dentistry, and Mechanical Dentistry. In this vote the Board of Overseers afterwards concurred.

The spirit of that first Faculty was shown at the very commencement, for it decided that the Dental School of Harvard University should rank right and justice above expediency, should re-

quire only that a student should be a man of good moral character, and know no distinction of nativity or color, and among the six who twenty years ago received the dental doctorate, Robert Tanner Freeman was the peer of any as a student and a gentleman. His name stands to-day upon our records and will remain in history as the first of his race to receive dental collegiate honors.

At a Faculty meeting on Feb. 16, 1869, it was "Voted that *Dentariæ Medicinæ Doctor* [D.M.D.] be recommended to the Board of Government of Harvard University as the title for the degree to be conferred upon the graduates of the dental department." And on Feb. 27, 1869, the Corporation established this degree. There was no thought of arrogating to ourselves any special superiority or claim of exclusiveness. Further it was expected that the new degree would approve itself to other universities, which might have dental departments, and thus gradually become the accepted degree. That such has not been the result is no fault of ours. On March 6, 1869, was held at the old Medical College the examination of candidates for the degree. On March 10th occurred the Commencement. Professor Edward H. Clark, M.D., delivered the Address, and Professor Henry J. Bigelow, M.D., conferred the degrees upon the six successful candidates. We have met to-day to celebrate the quiet and modest exercises which took place twenty years ago in that old historic building.

In the Fall of 1871, upon the recommendation of the Faculty, the Corporation voted to abolish the custom, which was universal with the dental colleges, of allowing a practice of five years to be equivalent to the first course of study and the graduation of students after attending one course at the school. This was the most important innovation ever made in its good influence upon the profession and the colleges. It was equally important in its disastrous effect, pecuniarily considered, upon the School. The Faculty considered that this custom had been a great hindrance to progress. The Harvard School was the first, and for many years the only one, to enunciate the truth, and at great expense to itself that the college was designed to educate the young incomers to the profession, and not simply to supply the doctorate to the more or less skilled handiworkers who had practiced without a degree for five or more years. Boldly living up to its convictions it maintained unassisted for years this higher standard, and thus cut itself off from the support of a very large class of practitioners throughout New England who, having no degree and wishing one, would otherwise have attended its instruction and have been enrolled among its alumni.

In the winter of 1872 written examinations were substituted for oral, and the candidate was required to pass successfully in each subject instead of a majority of them, as had been the cus-

tom. The Harvard School was the first to recognize that the ordinary terms of study and discipline were too short to prepare the student properly for practice, and a summer course of four months immediately following the winter session was established. The summer school was a success and the idea was soon imitated by nearly all of the schools of the country.

On March 1, 1875, an entire change in the curriculum was made and the new scheme embraced

1. A consolidation of the winter session and the hitherto optional summer session into one school year extending from the last of September to the first of June.

2. A progressive course of instruction, extending over two years, the teaching of one year not being repeated in the next.

3. An examination at the end of the first year in anatomy, including dissection, physiology and general chemistry. Unless the student successfully passed two of these he could not be admitted to the studies of the second year.

4. At the end of the second year an examination in dental pathology, dental materia medica and therapeutics, oral surgery, and surgical pathology, operative and mechanical dentistry.

5. All the examinations to be conducted in writing.

6. The candidates must have passed a satisfactory examination in all of the above mentioned subjects.

This scheme has been in operation ever since, but few slight modifications from time to time having been considered necessary. It has resulted in securing fine scholarships and excellent skill. The entrance examination was not originated by the Harvard Dental School, and it was adopted by us, not from a feeling of its need, but because it seemed a good rule for all dental colleges. Harvard has never been selected by the ignorant any more than by the indolent. The Faculty have preferred to maintain this higher course rather than lower the standard to secure more students. The true principle was aptly expressed by President Eliot in one of his annual reports: "The University should be more concerned to have a very good school than a very large one." There are now sixty of its graduates occupying prominent positions in Boston alone. This School and that of the University of Michigan, founded in 1875 upon the same plan, received, without solicitation or knowledge beforehand, a distinguished mark of approbation from the General Medical Council of Great Britain. Of all the American Dental Colleges, their diplomas only exempt the holders from examination for registration and license to practice in Great Britain.

At the conclusion of the Address, Rev. Alexander McKenzie, D.D., who for fourteen years has been Secretary of the Board of Overseers of Harvard College, was introduced to speak on the

"*Relation of the University to the Professional Schools.*" He said that the schools are essentially part of the university which sends its blood and life through the world and shares its name and honor. It is a governmental relationship; for the schools are under the charter and statutes and authorities of the university. It is therefore a nourishing relation, the university is to care for the schools. The method of the bestowal must depend on what theologians call "distributive justice," which provides that every one connected with the system be treated according to his deserts and in relation to the great ends of the system, but it must see that no department gets anything that does not belong to it. The university has the strongest desire to advance the dental school, but its treasury has not the money which can be given to the school. The dental school must have money of its own. The record of the school is most creditable and its influence is felt throughout the world. It has forty-two students and eleven professors, and a fund of only \$2,150, being dependent on the fees received from students for running expenses.

"*The Needs of the Dental School*" were set forth by Thomas H. Chandler, D.M.D., Dean of the School for the past fourteen years, who said: We may say briefly that the School lacks everything except zealous and competent instructors and devoted alumni. In our efforts to accomplish the work we have undertaken, we have been hampered and pinched on every side for twenty years. This work is the improvement of dental education by raising its standard, and the consequent elevation of the profession of Dentistry. A dental school should have a building specially adapted to its purposes, with large and well lighted operating-rooms and laboratories fitted with every necessary appliance, pleasant and comfortable lecture-rooms, clean and light reception-rooms for the patients who throng to it for treatment, suitable dressing-rooms, and whatever else can be devised for the comfort and convenience of its instructors, students and patients, not forgetting a well stored professional library and a good cabinet.

The Harvard Dental School, through the charity of the Medical School, has the use of a part of the old Medical building on North Grove Street. The operating-room is a large square room, well lighted near the windows, but unsuited near the middle for the delicate manipulations of tooth filling. This room is also used for a lecture room. The laboratory is in the basement, low, poorly lighted and inconvenient. We need a good building. We never shall be able to build one for ourselves; for our only resources are the fees received from the students, and if the amount of these fees exceeds in any year the running expenses, the surplus goes toward paying off our debt to the University treasury, a debt which exceeds by several thousand dollars all our assets.

Secondly, we need a fund for salaries, in order that the School may have a reasonably permanent corps of instructors in operative and mechanical dentistry, and may not lose year after year its trained teachers just when experience has made them doubly valuable. Professors and instructors should be paid. It is only in quite recent years that salaries have been paid to any teachers, except the demonstrators, who gave to the School the whole of their working time. Even now, the highest salary paid to a Professor is \$500 a year, while a lecturer is paid only \$100, and a clinical instructor only \$50 a year. As soon as an instructor's time becomes decidedly valuable for private practice, a struggle begins between his love of teaching and his interest in the School on the one hand, and his sense of obligation to make the most profitable use of his time on the other. The result of this struggle generally is that after a few years the School loses an experienced instructor. The remedy for this evil is, of course, larger salaries.

Thirdly, the Infirmary needs a fund for its support. It is a charity which relieves much excruciating pain and prevents more. The community does not expect physicians and surgeons to maintain at their own expense hospitals for the sick and wounded. On the contrary, it gives great endowments and levies taxes to support such hospitals. It should also support a dental hospital.

The literary exercises were followed by a banquet at which were Governor Ames, with many officers of the University, members of the Dental and Medical Faculties and their friends, numbering considerably over a hundred. N.

Pregnancy, with Accidental Hæmorrhage; Difficult to Control and Difficult in the Diagnosis.

Dear Sir:—The following case seems to me to be of special interest:

Mrs. P., æt. 30 years, mother of five children and had had three miscarriages. Her mother died of disease of some one of the abdominal organs. Mrs. P. had her last monthly period the latter part of last July. On September 24, whilst sitting in a carriage watching a procession passing by, she was taken suddenly with uterine hæmorrhage and was carried into a drug store in a fainting condition. On November 20 she had recurrence of the hæmorrhage, and also on December 21. I saw her first on November 20. On December 29 she had another hæmorrhage. At this time she took to her bed and remained there. The hæmorrhage never afterwards totally ceased. January 1, 1889, patient had profuse hæmorrhage; also January 16 and 21. On the morning of January 23 I tamponed in order to stop hæmorrhage. From this time on to February 14 there was con-

stant oozing of blood. The patient became very weak and exsanguinated. The uterus was of abnormal size and very hard in the left hypogastric region; especially was this so the last month of her pregnancy. The os was that of a pregnant woman, but it was high up and difficult to reach with the index finger. If this be a case of pregnancy, where does the hæmorrhage come from? Is it a case of placenta prævia? If not a case of pregnancy, is it a case of fibroid tumor? Is it hydatids? or is it epithelioma? I could not hear the foetal heart, neither could I, from palpation, make out pregnancy. I was in doubt till the pains came on at 6 A.M. February 14, and ceased at 2 P.M., dilating the os as large as a silver dollar, when I was first enabled to make a positive diagnosis of pregnancy. On February 16, at 1 A.M., the pains recommenced, and at 4.20 A.M. the liq. amnii sac enveloping a five to six mo. *in utero* child was born, which presented an egg-like appearance. The membranes contained no liquid and were tough and difficult to tear to expose the foetus. The child was dead. The placenta was on the heel of this egg-like tumor, and showed unmistakable evidence of previously for some time having been about one-third part separated from the walls of the uterus. The treatment consisted of small and repeated doses of ergot; except when profuse hæmorrhage occurred large doses of this drug were given.

The child measured $13\frac{1}{2}$ inches; that is, 7 inches from the crown of the head to the umbilicus, and $6\frac{1}{2}$ inches from the umbilicus to the soles of the feet. Mrs. P. has now fully recovered.

JOHN M. BATTEN, M.D.

309 Fifth Ave., Pittsburgh, Pa., March 9, 1889.

BOOK REVIEWS.

RECTAL AND ANAL SURGERY; with Description of the Secret Methods of the Itinerant Specialists. By EDMUND ANDREWS, M.D., LL.D., Professor of Clinical Surgery in the Chicago Medical College and the Mercy Hospital, etc., and EDWARD WYLLYS ANDREWS, A.M., M.D., Professor of Clinical Surgery in Chicago Medical College and the Mercy Hospital. Second Edition Revised and Enlarged, with Illustrations and Formulary. Chicago: W. T. Keener. 1889.

It is but a short time since we noticed in these columns the peculiar merits of the first edition of this work. The fact that a second edition has been called for so soon is proof that its merits have been appreciated by the profession. The present edition is published in good style and the additions to the text are valuable; making it one of the best practical monographs on the subjects of which it treats, with which we are acquainted.

MISCELLANY.

MEDICAL GRADUATES.—Following are the numbers of graduates of medical colleges that have recently closed their sessions: Bellevue Hospital Medical College, 138; Long Island College Hospital, 47; University of Kansas City, 15; Medical Department of Arkansas Industrial University, 17; Kansas City Medical College, 18; Woman's Medical College of Pennsylvania, 36; University of Kansas City, Medical Department, 15; Miami Medical College, 22 (not 12 as stated); Chicago Medical College, 45; Toledo Medical College, 8; University of the City of New York, 180.

NUT-SHELL IN THE TRACHEA.—A piece of nut-shell, a third of an inch long and nearly that at its widest part, with one very sharp point, was coughed up by a 4-year old patient of Dr. H. Swift, of Adelaide, Australia, after being in the trachea fifty-two days. Tracheotomy had been done and the child had scarlet fever in the meantime, but made a good recovery. The case is reported in the *Australasian Medical Gazette* for December. The chief point of interest is stated by Dr. Swift to be the length of time the foreign body was retained without giving rise to any serious complication such as deep ulceration, abscess, collapse of lung or pneumonia.

THE NATIONAL ASSOCIATION OF RAILWAY SURGEONS will hold its annual meeting at St. Louis, Mo., on Thursday and Friday, May the 2d and 3d, 1889. The prospects are that this will be one among the largest gatherings of medical men ever assembled in this country. Dr. W. B. Outten, of St. Louis, is the Chairman of the Committee of Arrangements, and everything will be complete for the accommodation of the surgeons. Any information desired can be had by addressing the Secretary, C. B. Stemen, M.D., Fort Wayne, Ind.

THE *Memphis Journal of Medical Sciences* is a new monthly journal, edited by Drs. Alexander Erskine, B. G. Henning, T. J. Crofford, S. A. Rogers, W. B. Rogers, and James L. Minor.

At the Centennial Celebration of Georgetown University Washington, D. C., last month, the degree of L.L.D. was conferred upon Dr. John B. Hamilton, Surgeon-General Marine-Hospital Service.

AUSTRALIAN RABBITS.—The Commission appointed to report on the means for arresting the multiplication of rabbits in Australia has reported that the experiments made under the direction of Pasteur, with the virus of chicken cholera, are an entire failure.

BEQUEST TO DENVER MEDICAL COLLEGE.—Mr. Jacob Haish, of DeKalb, Illinois, has recently given \$15,000 to the medical department of the University of Denver, which makes a total of \$40,000 that Mr. Haish has given to the University.

HEALTH IN MICHIGAN, MARCH, 1889.—For the month of March, 1889, compared with the preceding month the reports indicate that influenza and pleuritis increased and that scarlet fever decreased in prevalence.

Compared with the preceding month the temperature in the month of March, 1889, was much higher, the absolute humidity was more, the relative humidity and the night ozone were less, and the day ozone was the same.

Compared with the average in the month of March, in the three years, 1886-88, measles, intermittent fever, tonsillitis, inflammation of bowels, consumption of lungs and rheumatism were less prevalent in March, 1889.

For the month of March, 1889, compared with the average of corresponding months in the three years 1886-'88, the temperature was considerably higher, the absolute

humidity was slightly more, the relative humidity was less and the day and the night ozone were slightly more.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of March, 1889, at 29 places, scarlet fever at 32 places, typhoid fever at 8 places, measles at 12 places, and small-pox at 5 places.

Reports from all sources show diphtheria reported at 2 places less, scarlet fever at 20 places less, typhoid fever at 3 places less, measles at 5 places more, and small-pox at 5 places less in the month of March, 1889, than in the preceding month.

CLAIRVOYANT "PHYSICIANS."—The opinion of the Supreme Court of Wisconsin, by Lyon, J., holding that a clairvoyant physician is liable for failure to exercise the ordinary skill and knowledge of a physician in good standing, practicing in the vicinity, and not merely to the ordinary skill and knowledge of clairvoyants. If he holds himself out as a medical expert and accepts employment as a healer of diseases, but relies for diagnosis and remedies upon some occult influence exerted upon him, or some mental intuition received by him when in an abnormal condition, he takes the risk of the quality of accuracy of such influence or intuition. There are so many persons now who assume to act as physicians and take the lives of people in their hands that this decision holding them to a strict liability may perhaps be timely.—*Legal News*.

AN ARMY MEDICAL BOARD will be in session in New York City, N. Y., from May 1 to 31, 1889, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application for the necessary invitation to the Secretary of War, before May 1, 1889, stating the place of birth, place and State of permanent residence, and enclosing certificates based on personal knowledge from at least two persons of repute, as to American citizenship, character and moral habits. Testimonials as to professional standing, from professors of the medical college from which the applicant graduated, and of service in hospital from the authorities thereof, are also desirable. The candidate must be between 21 and 28 years of age, and a graduate from a *Regular Medical College*, evidence of which, his Diploma, must be submitted to the Board.

Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

JNO. MOORE, Surgeon-General U. S. Army,
Surgeon-General's Office, Washington, D. C., April 1, 1889.

THE DISTRICT MEDICAL SOCIETY OF CENTRAL ILLINOIS will hold its annual meeting in Pana, April 30, 1889. Reports on Surgery, Obstetrics and Practice of Medicine will be read, and several papers on important subjects are promised. President, Jacob Huber, M.D., Pana; and Secretary, J. H. Miller, M.D., Oconee, Ill.

VACCINATION.—That obtuse fraction of the community which prides itself upon blind opposition to vaccination might be moved to a more liberal attitude on the subject if it would condescend to look into the results that have been reached under its practical application. In Paris, for instance, where the law requiring vaccination is feebly enforced, the mortality from small-pox ranges from 136 to 10.1 to the 100,000 inhabitants, while in the principal German cities, where the vaccination laws are rigidly enforced, the death-rate is but 1.44 to the 100,000 inhabitants. London, under compulsory vaccination, has a death-rate from small-pox of but 0.6 to the 100,000 inhabitants. On the other hand, in the Canton of Zurich, in Switzerland, since the compulsory vaccination law

was repealed in 1883, the death-rate from small-pox has risen steadily from 8 to 85 to the 100,000 inhabitants.—*American Analyst*.

NECROLOGICAL.—Dr. A. M. Orcutt, of Hardwick, Mass., died February 11, 1889, aged 65 years. He graduated from the College of Physicians and Surgeons, Columbia College, New York, in 1849, commenced the practice of medicine soon after in Hardwick, and in October, 1850, married Mary, the daughter of Theophilus Knight, who still survives him with three daughters. Dr. Orcutt possessed superior native ability and a thorough knowledge of his profession, and enjoyed an extensive medical practice for nearly forty years. He had the confidence and esteem of all classes of the community and equally of his professional brethren. He was honored with various local offices, and served as Representative in the Legislature of the State in 1874. He became a member of the American Medical Association in 1884.

LEPROSY IN INDIA.—Under a call from the home Government, made in view of the possibility of more efficient measures by the State for the prevention and treatment of leprosy in India, the local authorities have furnished returns from which is gleaned the following information: In 1881, according to the census of that year, there were in India 131,618 lepers, of whom 98,982 were men and boys, and 32,636, not quite one-third, were women and girls. It is doubtful, however, if these figures represent the whole number, as many of these miserable creatures are secreted by friends. Of this great army of lepers about nine-tenths prefer local charity to organized relief, and resent even the slight restraints to which they are subjected in institutions devoted to their treatment, and avoid them in every possible way. As the disease can be stamped out only by the complete segregation of sexes and the life confinement of all tainted with it (measures so repugnant to the Hindoos as to be considered entirely impracticable), about all the Government can do for these poor wretches is to grant medical assistance and relief in voluntary hospitals and asylums, knowing that any relief can prove only temporary, and that even that cannot always be given.—*New York Evangelist*.

A WOMAN in Edinburgh, Scotland, is pregnant at the age of 62, it being her twenty-third time. She was also pregnant at the ages of 47, 49, 51, 53, 56 and 60. The case is attracting much attention from the physicians of that place, as it is a rare one.—*Wes. Med. Rep.*

ALUM IN BREAD.—Professor J. W. Mallet, of the University of Virginia, has been pursuing an interesting course of investigations into the effects produced by the use of alum in bread, and has found that, as has long been assumed, it is injurious. In the United States the greater part of the baking powders sold, it has been found, are made with alum, the acid phosphate of calcium, bicarbonate of soda and starch. The result of Professor Mallet's inquiry, as given in the *Pharmaceutical Journal*, has been to show that these powders give off very varying proportions of carbonic acid gas, and therefore different proportions have to be used for the same quantity of flour to produce the requisite porosity in bread. When moistened with water they yield small quantities of aluminum and calcium salts in a soluble form. Most of them leave, after use, the greater part of their alumina in the form of phosphate; but when acid phosphate of calcium is not used alumina is left. As the baking temperature in the interior of bread does not exceed 212° F., neither the water of combination of alumina or of its phosphate is removed from the residues of baking powder so used. However, in doses not very greatly exceeding such quantities as may be derived from bread as commonly used, Professor Mallet has found that hydrate and phosphate of alumina produced an inhibitory effect upon gastric digestion. He considers that this effect is probably a consequence of the union of albumina with

the acid of the gastric juice, and at the same time of the precipitation of the organic peptic ferment in an insoluble condition like a kind of lake. A similar action may also be exerted by hydrate of alumina upon some of the organic matters of food. From the general nature of the results obtained, it is inferred that not only alum itself is injurious, but that likewise the residues resulting from its use in bread-making must be ranked as objectionable, and that the practice of adding alum should be studiously avoided when the object aimed at is to make wholesome bread.—*British Medical Journal*.

PAMPHLETS RECEIVED.

Bosworth, F. H., M.D., New York City. *On the Relation of the Nasal and Neurotic Factors in the Etiology of Asthma*. Reprint from the New York Medical Journal.

Chisolm, Julian J., M.D., Baltimore, Md. *Eleventh Annual Report of the Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore*.

Daly, W. H., M.D., Pittsburgh, Pa. *On some Mild Measures of the Treatment of Intra-nasal Hypertrophies and Inflammations*. Reprint from The Medical and Surgical Reporter.

Gay, George W., M.D., Boston, Mass. *The Comparative Merits of Tracheotomy and Intubation in the Treatment of Croup*. Reprint from The Boston Medical and Surgical Journal.

Peterson, Frederick, M.D., New York City. *Extracts from the Autobiography of Paranoiac*. Reprint from the American Journal of Psychology.

Station List of Officers of the Medical Department and Hospital Stewards of the Hospital Corps, United States Army, March, 1889.

Parrish, Joseph, M.D., Burlington, N. J. *The Medical Jurisprudence of Inebriety*. Reprint from the Journal of Inebriety.

LETTERS RECEIVED.

Dr. Samuel N. Nelson, Boston, Mass.; Dr. C. D. Watson, Ontario, Cal.; John F. Woodward, Richmond, Va.; Physicians', Dentists' and Druggists' Ins. Association, Chicago; American Oxygen Association, New York; Dr. Thos. B. Evans, Baltimore, Md.; American & Continental Sanitas Co., Limited, New York; H. M. Archer, New York; Dr. Wm. H. Martin, Urbana, Ind.; Dr. J. W. Breedlove, Fort Smith, Ark.; Dr. L. H. Dunning, South Bend, Ind.; Dr. W. Skilling, Lonaconing, Md.; Jas. A. Curran & Co., Denver, Col.; Dr. G. S. Gove, East Pasadena, Cal.; National Surgical Institute, Indianapolis, Ind.; Medicinische Monatsschrift, New York; Dr. H. F. Adams, Colton, Cal.; Dr. G. L. Magruder, Washington; Lea Brothers & Co., Philadelphia; H. H. Swearingen, Washington; Dr. John M. Batten, Pittsburgh, Pa.; Rio Chemical Co., St. Louis; S. S. White Dental Mfg. Co., Philadelphia, Pa.; Horlicks' Food Co., Racine, Wis.; Dr. Clark Cook, Fowler, Ind.; Dr. D. Dedolph, St. Paul, Minn.; Dr. H. K. Lathrop, Royal Oak, Mich.; A. Fielden Briggs, Ann Arbor, Mich.; Henry Bernd & Co., St. Louis; Edward O. Robinson, Burlington, Vt.; H. S. Anders, Philadelphia; H. P. Hubbard, Co., New Haven, Conn.; Dr. J. P. Symons, Savannah, Ohio; Dr. John B. Roberts, Philadelphia; Dr. Thos. W. Kay, Baltimore, Md.; A. B. Westfall, Louisville, Ky.; W. H. Siple, University of Va.; Dr. John B. Castle, Burgin, Ky.; Dr. F. J. Weed, Cleveland, Ohio; Dr. W. F. Boygess, Valley Station, Ky.; Wm. H. Johnson, Louisville, Ky.; Dr. J. Chancellor Gilbert, Wessington, Dak.; Dr. A. L. Hummel, Dr. R. J. Duglison, Philadelphia; Dr. W. B. Spencer, San Francisco; G. D. Lummis, Middleton, O.; Dr. J. G. Carpenter, Stanford, Ky.; Dr. R. L. Thompson, St. Louis; Dr. D. W. Coker, Chicago; W. P. Cleary, New York; J. Astier, Paris, France; Dr. J. G. Smith, Canaan, Ala.; Dr. Russell Bayly, New York; Sharp & Dohme, Baltimore, Md.; Dr. John P. Stoddard,

Muskegon, Mich.; C. J. Forbes, Lander, Tex.; Wm. Davis, Philadelphia; I. Halderstein, New York; Dr. C. H. A. Kleinschmidt, O. Swain, R. Middleton, Washington; J. H. Bates, New York; Dr. M. E. Bates, Chicago; Dr. H. R. Storer, Newport, R. I.; S. S. White Dental Mfg. Co., Philadelphia; Dr. Adam H. Wright, Toronto, Ont.; Dr. G. J. Holmes, New Britain, Conn.; Savage & Farnum, Detroit, Mich.; Lillian Dell, Lebanon Springs, N. Y.; R. A. Robinson & Co., Louisville, Ky.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 30, 1889, to April 5, 1889.

C. O. at Los Angeles, Cal., reports the death of Lt.-Col. R. H. Alexander, Surgeon U. S. Army, at 11:30 this morning, March 29, 1889. Telegram.
Lt.-Col. Charles H. Alden, Surgeon U. S. Army, Maj. Henry McElderry, Surgeon U. S. Army, Capt. Washington Matthews, Asst. Surgeon U. S. Army, and Capt. James C. Merrill, Asst. Surgeon U. S. Army, detailed as members of Army Medical Board to meet in New York City, May 1, 1889. Par. 5, S. O. 74, A. G. O., March 30, 1889.
By direction of the Secretary of War, the following changes in the stations and duties of officers of the Medical Department are ordered: Major Joseph R. Gibson, Surgeon, relieved from duty at Ft. Lyon, Col., and ordered to Ft. Sheridan, Ill. Capt. A. H. Appel, Asst. Surgeon, relieved from duty at Ft. Sheridan, Ill., and ordered to duty at Ft. D. A. Russell, Wyo. Capt. George H. Torney, Asst. Surgeon, relieved from duty at Ft. Monroe, Va., and ordered for duty to Ft. Brown, Tex. Capt. Samuel Q. Robinson, Asst. Surgeon, relieved from duty at Ft. Brown, Tex., and ordered to Ft. Hamilton, N. Y., for duty. Par. 11, S. O. 77, A. G. O., Washington, April 3, 1889.
Asst. Surgeon R. R. Ball, ordered to Ft. Riley, Kan., for duty. S. O. 36, Hdqrs. Dept. of the Missouri.
Asst. Surgeon R. W. Johnson reports departure for Whipple Bks., Ariz. Ter., March 25, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending April 6, 1889.

P. A. Surgeon E. H. Marsteller, ordered to the U. S. S. "Adams."
E. H. Stitt, of South Carolina, commissioned Asst. Surgeon U. S. N.
M. F. Gates, of Pennsylvania, commissioned Asst. Surgeon U. S. N.
Surgeon J. C. Boyd, detached from the Bureau Med. and Surg. Navy Dept., and ordered to the "Yorktown."
Asst. Surgeon M. F. Gates, ordered to the Navy Yard, Philadelphia.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Four Weeks Ending March 30, 1889.

Surgeon P. H. Bailhache, relieved from duty at Philadelphia, Pa., to assume charge of the Service at San Francisco, Cal. March 28, 1889.
Surgeon H. W. Sawtelle, when relieved at San Francisco, Cal., to assume charge of the Service at Portland, Me. March 28, 1889.
P. A. Surgeon C. E. Banks, when relieved at Portland, Me., to assume charge of the Service at Vineyard Haven, Mass. March 28, 1889.
P. A. Surgeon R. P. M. Ames, when relieved at Vineyard Haven, Mass., to assume temporary charge of the Service at Philadelphia, Pa. March 28, 1889.
Asst. Surgeon G. M. Magruder, when relieved at Louisville, Ky., to proceed to Memphis, Tenn., for temporary duty. March 28, 1889.
Asst. Surgeon J. B. Stoner, to proceed to Pittsburgh, Pa., for temporary duty. March 28, 1889.

THE
Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, APRIL 20, 1889.

No. 16.

ORIGINAL ARTICLES.

DO MATERNAL IMPRESSIONS AFFECT
THE FÆTUS IN UTERO?

Read before the North Texas Medical Association, Dec. 13, 1888.

BY J. M. FORT, M.D.,
OF PARIS, TEXAS.

We live at a period that will be memorable in the world's history. It is an age of deep and profound thought. An age of unwearied research and investigation; and an age of brilliant discoveries.

All science is achieving grand triumphs, and results that would have confounded and amazed our ancestry of fifty years ago.

Medical science is moving rapidly and grandly forward in this upward and onward march of progress. It is rapidly leaving behind it the dictum of mere opinions and theories which for so many centuries obstructed its progress and misled the minds and wasted the energies of medical men; for, until comparatively a short time ago, theories and speculative opinions were accepted and acted upon by medical men as so many established facts.

It is no easy task to change or alter men's preconceived and long-cherished opinions, but opinions are not always facts, and an opinion unsupported by testimony is but an opinion still. That they are the forerunners of knowledge I admit. They lead the mind far out into the unbounded fields of speculation, seeking to find where truth is hid; but, it is left for experimentation and demonstration, aided by clinical research, reason and analogy to remove the rubbish from off these germs and to expose their hiding places.

Medical science—as all science—“*is the enemy of credulity.*” It challenges reason, invites investigation, stimulates inquiry and welcomes facts, to the end that human life may be prolonged and enriched by health and happiness. It seeks to ennoble, to elevate, and to refine the human race. It seeks to give proper food and shelter, education and raiment, and to inculcate a higher appreciation of health in the physical and intellectual man, and to erect beacons of warning along the dangerous shores of life.

The question which I propose to discuss in this

paper, so far as my investigation and research go, is based solely, and only, upon “opinion or belief,” with an occasional coincidence, unsupported by law or testimony.

“The occasional apparent relation of cause and effect being due in most instances to accidental coincidences, which would be far less frequent if the alleged facts could be obtained prior to instead of subsequent to the birth of the child.”

It is a question which embraces either a widespread error, fraught with human misery and human suffering, a traditional superstition, kept alive, to a great extent, by the medical profession, or it embraces a profound, occult and mysterious law of our being, of which we know nothing, save and except its sad consequences.

The question is: Can the theory of “maternal impressions,” as generally believed and contended for by the great mass of people, and accredited to a considerable extent by learned and scientific physicians, be true?

In other words, can mental impressions or emotions made upon the mind or brain of a pregnant woman, no matter how revolting or disgusting they may be, no matter how horrifying, even if of such a character as to arouse or elicit her feelings to their fullest extent or uttermost depths; or if they be of such a nature as to elicit the tenderest and most sympathetic emotions of her being; or if calculated to excite a keen sense of alarm or fear of impending danger. And if such impressions be made *suddenly, violently*, and should they prove to be lasting in their effects, can these impressions, photographing, as they may, the object or objects making them upon the brain, I say, can they, by or through any known agency, or by any known law, physiological, pathological, or psychological, or by any change which such impressions may make, by nervous shock, in the nutritive element of the blood of the woman, be reproduced in or on the fœtus in utero, or manifest themselves by any abnormality of the fœtus? This is the question. What shall the answer be?

I admit that in a large majority of instances of pregnancy, especially in women of nervous temperaments, the mental faculties act in an exaggerated sphere. They seem to lose for the time being that happy equilibrium and harmony of thought

and action which may have characterized their former lives, and which makes them the charming creatures we know them to be.

The brain does not always give forth a white light, but by perversion the thoughts are made prismatic. They indulge in, or give way to morbid sentiments, and irritable moods, which seem to transform or revolutionize their entire character, passions and prejudices, frequently giving cast to their thoughts and actions. Their desires colored by hopes, or weakened by fears, often warp the judgment and mislead the will. Not infrequently the mind is distorted or, as it were, deformed by morbid apprehensions, and consequently beset with gloomy clouds and dark forebodings of coming evil to themselves or their offspring.

This abnormal mental condition manifests itself in various and frequently in unexpected ways, and when taken in connection with the functional modifications of the nervous system incident to pregnancy, often gives rise to functional disorders of the senses—such as dimness of vision, painfully acute smell, hearing, etc.—as well as to a class of nervous diseases—such as neuralgias, hysteria, vertigo, syncope, and occasionally mania.

As a rule, emotional susceptibility is greatly increased, and a condition of mind, for the most part, exists which readily receives an impression, and as readily perverts, distorts or magnifies it.

These psychical changes and nervous manifestations incident to pregnancy, as every physician knows, are subject to innumerable individual variations.

Now, engraft upon such a mental condition, *if you will*, the belief or opinion that deformity or abnormality to her offspring may result from impressions made upon the mind of the pregnant woman by witnessing certain painful sights or hearing certain distressing sounds, or by permitting the mind to dwell upon certain subjects, especially if of a disagreeable or distressing character, and you most assuredly plant the seeds of gloom and despondency, and give rise to a fearful, yea and a tearful, looking forward to the day of her confinement which such a thought would necessarily and unavoidably produce upon the mind of a sensitive woman.

For permit me to say, that under the most favorable circumstances the pregnant woman looks forward with anxious solicitude to the day and hour when her maternal instincts and motherly yearnings will be gratified. When with feelings *stronger* by far than the *love of life* or the *fear of death* she can clasp in her fond embrace and press to her devoted heart *her own precious babe*, around whom she has already entwined the sweetest, the tenderest, and the most endearing ties and emotions that have ever found lodgment in the human heart.

If, perchance, however, it can be established,

either as a fact or as coming within the realms of probability, that such effects may result from such causes by some mysterious occult law of our being, though inexplicable in the present state of our knowledge, it behooves us as medical men, it behooves husbands, fathers and brothers, it behooves mothers, sisters and friends of the pregnant woman to caution, admonish and to guard her faithfully against every contingency which would even in the most remote degree be calculated to bring about or result in such a sad calamity, for they are the mothers of the race, and when pregnant *woman* appeals to the sympathies, and to the most sacred instincts of our humanity—care for her—be kind and gentle with her, for she is fulfilling a God appointed destiny.

To ask what are "maternal impressions," is but to ask what are intellectual acts, or what are thoughts. It is true, scientists and materialists claim to have answered this question, and perhaps have done so to their own satisfaction, but their answer is far from being received or accepted by the great mass of mankind, and by very many physicians.

That consciousness, or thought, which underlies and is the basis of all knowledge, arising independent of and uncontrolled by the will, is located in and arises from brain matter *no one will deny*. Of all material matter which goes to make up this grand universe, upon which we look with wonder and astonishment, and wherein we find displayed and made manifest to our senses on every hand an infinite wisdom and a creative power far beyond our finite comprehensions, I repeat, of all this wonderful mass of material matter, brain matter, and brain matter only, gives rise to thought. While it is true we can form no idea or conception of thought or intellectual acts aside or disconnected from brain matter and brain action, yet may we not unhesitatingly assert "that physiological research *has not* reduced the fact of intelligence to the phenomena of matter only." "Can thought be evolved by physical or chemical forces or the molecular play of brain matter only?" Physiology cannot or does not affirm the proposition, and yet those who claim to be advanced thinkers assert "that the physical forces of the brain are all sufficient for the production of thought."

One says, "All states of consciousness in us are immediately caused by molecular changes of brain matter." (Huxley.)

Another says, "That the brain secretes thought just as the liver secretes bile." (Cabiness.)

And another says, "That thought is a force evolved by brain action."

It is evident from the diversity of opinion here expressed as to *how* thought is evolved from brain matter, that he who endeavors to solve the mysterious connection between mind and matter finds himself walking in a field of obscurity, surrounded on every hand by dark clouds of uncertainty.

which admonish him that there is "a horizon beyond which human knowledge cannot go."

In the dark valley which intervenes between mind and matter, where thought, lost in a labyrinth of mysteries, struggles to comprehend the mode and manner of its own creation, we meet with some of the profoundest mysteries of our nature. Here, gentlemen, we fall in with sleep, dotage, somnambulism, and insanity, mental conditions upon which scarcely a ray of light has been thrown, and around which the veil of mystery hangs like a heavy drapery.

"In the misty clouds of doubt and speculation which forever brood over this dark gulf a thousand theories and a thousand errors lurk."

"In the language of Dr. Theophilus Parvin, we may weigh the brain, count its billions of cells, measure, if you please, the rate of its sensory impressions or motor impulses. You may go further, and localize its functions and analyze its matter, you may convert it into OHNC and Phos., if you wish, you may measure the undulations or vibrations of its molecules, and determine its mechanical or chemical forces and phenomena, and after all of our observations, calculations and analyses" what have we accomplished? We have but *determined the cerebral conditions incident to thought or its production, but not what constitutes thought itself.*

I am fully convinced that every intelligent, thinking physician, every physician who has directed his attention to what are called "mental influences in the causation, the aggravation, as well as in the cure of diseases" will agree with me in the opinion, yea in the *conviction*, that there is something in these bodies of ours superior to the body itself."

I do not believe, therefore, that the phenomena of mental action can be referred to or is dependent on physico-chemical laws, *per se*. "But we must accept the idea of a vital principle as being super-physical, and with that idea, its correlate, a living Creator such principle." "God pervading all, is in all things the mystery of all and each."

So then, in answer to the question, What are "maternal impressions," or what are thoughts considered in their entity? we must, in the language of our esteemed fellow member, Dr. J. S. Sanders, say "we don't know." But while we may not be able to materialize thought, or unravel the mystery of its production, we do know, however, that the brain is so constituted that it can, and does, receive impressions made upon it by external objects though the medium of the senses; or they may originate in the domain of thought itself (as in dreams), through the inherent powers of the imagination, "which worketh while the judgment is at rest and the will is in captivity," and in either event these impressions may become *fixed, permanent, and living images*, ever ready to be called up and brought vividly before the mirror

of the mind, never to be erased so long as the mental faculties retain their normal powers.

Through the medium of language these images or impressions may be conveyed from brain to brain, from mind to mind, *only*, for physiology teaches us that the nervous system—which includes brain and nerves—is anatomically and physiologically separate and distinct from all other systems and organs of the body; that its physiological properties are *inherent*, and that it gives to no tissue or organ its special irritability or power of *performing its particular functions*, *i. e.*, brain matter evolves thought and receives impressions, and nerves transmit them. The power of transmitting thoughts or mental impressions is not and cannot be delegated to any other organ or tissue of the body.

Modern physiology, founded to a great extent upon experiments made upon living animals, teaches us that the intellectual brain; the home of intelligence, the *canvas* upon which these wonderful "maternal impressions" are painted, has far less influence over the functions of the body than at one time was supposed. For instance, it has been demonstrated that, after division of the *dorsal spinal cord*, acts proper to copulation, and those of labor and birth, take place in a normal way, and that the processes of ovulation—of the development of the pregnant uterus—which necessarily involves the development and growth of the foetus), and the lacteal glands, the development of the impulses which are associated with reproduction, suffer no visible impairment from this operation.

I believe that it is a conceded fact that the umbilical cord, which varies in length from 4 to 60 inches, has no nerves; that is, there are no nerves passing from the uterus of the mother along the cord to the embryo, by which "maternal impressions" could be conveyed to the developing embryo.

Again, we all know that the foetus is surrounded by, and floats in, the amniotic fluid, and that this fluid is developed *very early* in foetal life; that it reaches its maximum quantity about the middle of gestation, and then lessening to the end of pregnancy; so that these "maternal impressions" could scarcely reach the foetal body by or through the medium of its contact with the interior wall of the uterine organs. And since we have shown that the nervous system *never* delegates its peculiar functions to any other organ or tissue of the body; and since it has been determined, and I presume it is conceded by every one, that nerve tissue *only* conveys mental impressions, and as there is no nervous connection whatever, direct or indirect, existing between the organism of the mother and the foetus *in utero*, I again ask how, and by, and through what medium these intellectual impressions are transmitted, or conveyed from the brain of the mother to the foetus *in utero*?

To surmount these barriers to the acceptance of this theory we are told that these impressions may be conveyed in early embryotic life, before the allantois and other membranes form, the placenta and umbilical cord. Before proceeding to meet this suggestion—for it is only a suggestion—I will say that, in a vast majority of instances, it is alleged that these "maternal impressions" operate or exert their deleterious influence upon the foetus at a later period of gestation; that is, at some period from the third or fourth month of gestation till near the end of pregnancy. As a rule, but little notice is taken of these "maternal impressions," and but little importance attached to them, during the first months of gestation.

The great Creator of all things has ordained from the foundation of the world that man, with all of his capabilities and yet unknown possibilities, should be born of woman. She is the matrix of mankind—the mother and perpetuator of the races; she carries in those wonderful little ovarian bodies of hers the seeds of the human family.

In all the higher order of animals or beings, two separate individual beings are necessary to accomplish the process of germination—one the male, endowed with the fecundating power or nature, and the other the female, endowed with the germinating power or nature. "Male and female created he them, unto the end that they might increase, and multiply, and fill the earth with intelligent beings, wonderfully endowed with life faculties."

In the germinal spot or vesicle of the fecundated ovule or egg of the human female, a microscopic object, $\frac{1}{30000}$ of an inch in diameter, is comprised the very commencement of human life. And in the ovum, which is only $\frac{1}{20}$ of an inch in diameter—strange, wonderful and mysterious as it may seem and is—in this wonderful little object there dwell "*physical potentialities, species, race, family and individuality*;" yea, and more, for here we find implanted that wonderfully mysterious and incomprehensible law of *heredity*—a law to the operation of which we owe our being; a law transmitting the physical, intellectual and moral qualities and peculiarities not only of parent and family, but of race and species, from parent to child; a law far-reaching and widespread in its nature and in its operations; "a law in which these distinctive qualities and peculiarities of race, or family, or both, may slumber through one or more generations, to reappear in subsequent ones." In the operation of this law, we frequently find "disease transmitted from one parent or the other to the offspring, and the disease may show or manifest itself in the child, before it does in the parent transmitting it. Or, again, the malady may date back to a grandparent, the father or mother transmitting to their children a disease of which they (the parents) presented not the slightest manifestations perhaps during a long life."

How true are the words of Edgar Fawcett:

"Who sees how vice her venom wreaks
On the frail babe before it speaks;
And how heredity enslaves
With ghostly hands that reach from graves."

When the vital cells or spermatozoa of the male reach the ovule of the female, many of them collect around it, floating in a medium seemingly provided for the purpose. Several of them may, and frequently do, penetrate the zona-pelucida, its outer membrane, but it is left for one, and one only, to accomplish its fertilization.

When this vitalizing cell enters the germinal vesicle of the ovule, in obedience to an inherent reproductive law which pertains to all germ life, it divides itself into two complete and perfect cells, each retaining its distinctive characteristic features. One, the protoplasmic cell formed of a part of the head of the spermatozoon, impelled by an inherent sexual power, goes direct to the protoplasmic cell or germinal spot of the ovule, and these two protoplasmic cells fuse into one, and form the segmentation nucleus of the fertilized egg.

Again, the vital cell formed by the tail of the spermatozoon unites with the protoplasm furnished by the ovule, forming a second joint or combined cell. These two, in connection with a nucleus or cell resulting from the fusion of the remainder of the head of the spermatozoon with the residue of the germinal vesicle of the ovule, forming, as you see, three classes of cells or spheres, called, as you remember, epiblast, hypoblast, and mesoblast. These, in connection with a group of cells which result from the division of the ovum, called "blastomeres," constitute the several groups of cells developed in the ovum—each cell divides, and each of these again divides, and so on until groups of each are developed.

From these several groups of vital cells as I have endeavored to describe them, formed by fusion of the male and female protoplasmic material, *the foetus, with all of its organs and tissues, is developed*. And this is accomplished by the same process, and in the same manner, that the organs and tissues of the adult are regenerated and maintained—that is, by cell proliferation and modification.

The youngest human ovum of which we have any record, that has ever been seen, was estimated to be twelve or thirteen days old, and it is thought that it requires about that length of time for it to reach the uterine cavity after leaving the ovarian nidus. During the transit of the ovum through the Fallopian tube, and until attached to, or overlapped by, the mucous lining membrane or decidua of the uterus, nature provides it with its own nutrient material. Most assuredly, it cannot be influenced or impressed by "maternal impressions" at this stage or period of its development, since it has no nervous connection with the uterus,

nor does it draw its nourishment from the nutrient element of the mother's blood. And further, at the end of the first month of gestation, the embryo is but a pulpy mass, without fetal form, and only $\frac{1}{8}$ of an inch in length. The amniotic fluid, however, has been developed, and the embryo can be seen floating therein even before this period.

The process of segmentation, or binary division, is usually completed by the time the ovum reaches the uterine cavity, by which time a heterogeneous mass—not of cells, but of groups of cells, is formed; each group being endowed with an inherent capacity to form by multiplication and coalition certain organs and tissues of the foetal organism—that and no other. They are the architects and builders of the new being, acting wholly independent of nerve influence from any source whatsoever.

To demonstrate more fully and forcibly this inherent cell law, I here show you the picture of little Ada Hurst, aged two and a half years, from whom I assisted Dr. I. F. Hooks, of Paris, one of our respected and honored members, in removing a dermoid tumor weighing $7\frac{1}{2}$ lbs. One of the ovaries of this child, from some unknown reason, caught up the process of cell multiplication or proliferation, and set to work to make a foetus of its own; the effort resulting in a confused and conglomerate mass of foetal tissue, including hair, bones, etc.

By the operation of this law there is implanted in the ovum everything necessary for the development and growth of the foetal organism, except, perhaps, the nutrient material out of which the process is to be accomplished. The Deity, in his infinite wisdom, has seen fit to isolate these new beings, and place them out of the reach of influences calculated to mar their being or prove hurtful to their development and growth.

To sustain the theory of "maternal impressions" we are further told, that these severe mental emotions so impress, alter, and change the nutritive element of the blood of the mother, that it perverts and vitiates the nutritive process of the foetus; that the foetus, being in the formative stage, is more readily affected by a vitiated or hurtful element of nutrition than the adult.

Upon the point of foetal nutrition I will say, that it has been recently reasserted that the foetus is nourished altogether by swallowing, or absorbing, through the skin, the amniotic fluid, and that the only function of the placenta is to act the part of a lung; that is, to give off the dioxide of carbon from the foetus and to receive oxygen from the arterial blood of the mother, in the same way and manner that the fimbriated extremities of the gills of the fish receive it from the water which it breathes.

If this theory prove to be true, then the foetus supplies its own nutrient material, since the amniotic membrane is strictly a foetal membrane, formed within the ovum in very early embryotic

existence, whose physiological function is to furnish the liquor amnii. This fluid being a secretion furnished by the amniotic membrane, it is more than improbable that maternal impressions could pass through the process of secretion and reach the foetus through such a circuitous route. If, however, it receives its nourishment from the arterial blood of the mother—which it unquestionably does—and these maternal impressions produce a systemic or nervous shock which so alters and changes the nutritive element of the maternal blood as to render it unfit for foetal nutrition, *why not for maternal nutrition as well?* since, for every ounce of this material which is appropriated to the development of the foetal organism, from 2 to 3 lbs. of the same material goes to the regeneration or maintenance of the organism of the mother.

The pregnant woman who maintains her normal physical condition during pregnancy appropriates to the maintenance of her own organism not less than 30 lbs. of nutrient material per month; aggregating 270 lbs. during the period of gestation, and if the child at birth weighs 9 lbs., which is something over an average, the mother will have used *thirty pounds* of the nutrient material, to the foetus' *one*. Further, if the process of nutrition can be deranged, perverted or arrested by impressions made upon the mind, it occurs to me that it would occur more frequently in the mother than in the foetus, since she is in possession of a *matured* nervous system, which it is claimed regulates the functions of secretion, nutrition, calorification, and all the processes of organic life.

It is not claimed, however, that the entire organism of the foetus suffers from this altered condition of the circulating medium of the mother. If such was the case, and "maternal impressions" proved detrimental to the development and well-being of the foetus, we might very rationally conclude that such ill effects were the result of a vitiated or depreciated condition of the nutritive element of the blood. On the contrary, however, their evil effects are only seen in some certain *locality, organ, or tissue*, making manifest such alteration or perversion of the normal process of nutrition by reproducing, on the foetus, a duplicate of the *picture* impressed, or photographed, on the mind of the mother. In other words, these cruel "maternal impressions," as though capable of exercising a degree of intellectual control over the foetal nutritive process, *say to it*, "See that thou makest it" (the picture); it may be a bloody hand, a lacerated and bleeding limb or a deformity of some kind, or a snake, or a turtle, or a rat or mouse, or some other scary animal or ugly sight—it *matters not what*, just so it makes a "maternal impression"—"see that thou makest it according to the pattern showed thee in the mount."

What a wonderful perversion of nature's laws. As an argument in favor of this theory, we are further told that the foetus is being rapidly developed, that it is in the formative stage, and consequently, any slight alteration in the nutritive process would be followed by more serious results in the foetus than in the adult.

In answer to this I would say, that it is a well-known fact that, in a large majority of cases of pregnancy, nature provides for the development and growth of the foetus, by inaugurating in the system of the woman an exaggerated or hypernutritive process similar to that which takes place in the foetus. This is made apparent by an increase of weight, by an increase of adipose tissue, and by a general improvement in the physical condition and appearance of the woman. This increase of tissue being as newly formed, and as recently developed, as the organism of the foetus, I can see no reason, nor do I find any medium through which nature could make such cruel and unfair discrimination against the innocent unborn, upon this ground. It seems strange to me that whatever of evil effects or disastrous consequences flow from these "maternal impressions," or mental shocks, that they should be visited on and manifest themselves only upon the foetus *in utero*.

Again, if the foetus *in utero* is to be regarded during its development; that is, during its intra-uterine life, as a part of or as an addendum to the physical organism of the woman, subject to all the mutations for good or ill that may take place in her organism, governed and controlled by the same physiological laws that sustain vitality and govern the animal functions, including the nutritive process in the body of the mother; I say, in that event, "maternal impressions" or intellectual acts are most assuredly *inoperative*, and cannot be regarded as instrumental in the production of changes in the developing foetus to the extent of producing abnormality, for it is well known, nor is it claimed by the most ardent advocates of this theory, "that the Ethiopian can change his skin or the leopard his spots." "Or which of you by taking *thought* can add one cubit to his stature."

If the intellectual impressions can "mark" or deform the foetus, then they can "mark" or deform the body of the mother as well. As before intimated, I regard it as an unsettled question, as to what extent the process of nutrition is influenced or controlled by nervous influence, or nerve force. In muscular atrophy, for instance, the shrinking and wasting of the muscular tissue is said to be due to inaction; or, in other words, to the loss of motor power, and not to loss of nerve force by paralysis.

I am convinced that the nutritive process going on in the foetal organism is in no wise influenced by its own nervous system. This, I think, is

clearly demonstrated by the perfect development of the acephalic monsters. Some of these are perfect specimens of physical development, *less the brain*. I have in my possession a *finely formed male child*, an anencephalic monster, which is destitute of brain and spinal cord. And yet, some of these have been known to live for from a few hours to six and seven days. Bayle reports one that was born with two teeth, which lived seven days. Ramsbotham reports seeing one of these anencephalic monsters alive thirty-six hours after birth. He states that it cried, sucked, and seemed to perform all the animal functions much more perfectly than would have been supposed. He also relates an instance of a woman having had six children and each alternate one being an anencephalic monster.

It would extend this paper to too great length, and unnecessarily consume the time, to even attempt to enumerate the different abnormalities which have been classified by writers upon this subject, to say nothing of those which have not, running as they do over an extensive field of observation, from the proverbial "strawberry mark" to the composite monstrosities.

In the classification of the hæmiterata, or anomalies of growth alone, we find fourteen varieties described; in the single monstrosities ten varieties; in the twin or composite monstrosities twelve varieties. Then again, each of these varieties are subdivided, extending the list to great length. In the field of malformations or deformities we find an extensive variety, such as bow-legs, knock-knee, bandy-legged, hump-shoulders, all the varieties of club-foot, club hands, supernumerary fingers and toes, cleft fingers and toes, webbed fingers, etc. These are generally hereditary.

"Thus in a family of twelve children two out of four boys had harelip and fissured palate, and one out of eight girls had hypertrophy of the right lower extremity with atrophy of the right great toe. The father had a supernumerary little finger on one hand."

Intra-uterine amputations are not infrequent. Skin diseases are more frequent, and are often likened to the skin of some animal seen by the mother. Congenital nævi are very frequent. This is the disease which makes the "marks" on the new-born babe, and which is contorted into the likeness or image of such a variety of objects by the imagination of old women and doctors, and attributed to "maternal impressions." When arterial and cutaneous they are of a bright florid color, and are made to represent some bloody scene, if, perchance, anything of the kind should have been seen by the mother during gestation. Where venous and cutaneous they are of a bluish or purplish color, and are then made to represent another series of objects.

This disease of the capillaries though generally congenital, may occur after birth. It may

be single or multiple, cutaneous or subcutaneous, arterial venous or mixed. If it was in the human family *only* that these abnormalities occurred we might be inclined to attach more importance to this prevalent idea, but they are of as frequent occurrence if indeed not more frequent in the lower order of animals, especially in the domestic animals, such as the horse, the cow, the dog, the hog, the cat, etc. When they occur in these animals they are the counterpart of what we see in the human subject. They are not infrequent in the feathered tribe, also.

It is true, the animals above enumerated are gifted with wonderful instincts, but it is hardly reasonable to suppose that they possess a sufficient degree of intellectuality to be influenced by such sights or objects as is claimed make these maternal impressions upon the mind of the pregnant woman.

In early embryotic life in case the amnion is not lifted from the newly forming skin of the embryo, in consequence of an insufficient secretion of amniotic fluid adhesions form between the body of the foetus and amnion, and as the amniotic cavity becomes distended the adhesive material stretches and forms bands of greater or less length and thickness. "These adhesions frequently prevent the proper arching over and closure of the body cavities, producing such deformities as *eventration*, *anencephalus*, etc.

Moreover, a developing limb, as an arm or leg, or a hand or foot, may be caught between two of these bands, or may be encircled by one, and as it grows be so constricted as to produce an amputation. The amputated portion of the limb being in the embryotic stage of development is soon dissolved by the amniotic fluid—or it may be accomplished by the limb being encircled by the umbilical cord. Amputations in-utero occur in this way, and not as a result or consequence of "maternal impressions," as some believe.

In conclusion, I would say that various causes have been assigned for the production of these abnormalities. Some physiologists are inclined to the opinion that the germ is imperfectly formed prior to impregnation. Others that they may result from an undue admixture of protoplasmic material at the moment of fecundation. Other causes also, it is thought, may operate, such as the rapid and active growth which develops from a single cell—in the short space of nine months—one of the most intricate, complicated, complex and mysterious beings in all the animal creation. When we remember that the most important vital functions of this being are performed during its development by an organ itself *without* the foetal body, and subject to diseases and accidents, and when we consider that the foetus is essentially a parasitic being, liable to become diseased and development arrested by some systemic disease of its host. And again, that these results may be

brought about by some taint or vice handed down from somewhere along its long line of ancestry, even from "Ghostly hands from graves." I repeat, when we take all these things into consideration—and many more which could be mentioned—and then remember that hundreds, if not thousands of children are born every hour, may we not rather be surprised at the comparatively few abnormalities we meet with. And may we not rationally conclude *that there are causes* enough operating to account for their occasional occurrence—which appear more rational and more in harmony with the laws of cause and effect—than to attribute them to the intellectual acts or mental impressions of the pregnant woman. For it is well known that these so-called "maternal impressions" exist to a greater or less extent in the minds of a large majority of pregnant women without producing any visible effects whatever upon the child.

CONSTITUTIONAL TREATMENT OF ACUTE CATARRH OF THE UPPER AIR PASSAGES.

*Read before the American Rhinological Association at Cincinnati,
September 13, 1888.*

BY J. G. CARPENTER, M.D.,
OF STANFORD, KY.

Acute catarrh or cold of the "upper air passages" might truly be called a "freshet" or "overflow" of the watery and other constituents of the blood, into the mucous and submucous connective tissue. To successfully treat this disease, there are three indications, viz.: first, to arrest it in the first stage, or prevent this overflow and injury to the normal tissue; second, should the disease have passed into the second stage, drain out and deplete the engorged and inflamed tissue and arrest inflammation; third, repair the damage to the affected tissue by the disease having passed into the third stage, and not allow it to end in chronic catarrh, but resolution.

Constitutional Treatment.—Bromide of potassium diminishes reflex irritability and cutaneous sensibility, and depresses the activity of the spinal cord and the medulla, and has its appropriate place in the first and second stages of acute catarrh. The iodide of potash acts specifically on the mucous lining of the eyes, nose, frontal and ethmoidal sinuses, mouth and salivary glands; 3 to 10 grs. taken at bedtime will often cut short a cold in the upper respiratory tract, and is indicated in the first and second stages. Combined with 20 or 30 grs. of the bromide its action is increased; in addition, there is the anodyne effect of the latter.

"Inhaled or taken by the stomach camphor exerts a decided influence on cold in the head." Employed at the beginning of an attack (it is useless after the first stage), camphor sometimes arrests a cold, and failing in this it abates its vio-

lence, obviating or diminishing frontal headache, restlessness, sneezing and running at the nose. ("Inhalations or sprays of spts. of camphor locally, in weak solutions, assists the internal administration." Ringer.) The same may be said of menthol in weak solutions, or the pencil applied to lips, tongue and nares.

The hot foot-bath, given in ordinary colds by patient sitting on the side of the bed in a warm room, with a blanket enveloping both patient and tub, for fifteen to thirty minutes, keeping the temperature of the water 95° to 100° F., and then remove feet wrapped in the blanket without drying, causes a free perspiration, and allays irritation of the air passages and restores the skin to its normal function.

Should an acute catarrh or "cold" be very violent, the patient should be placed in bed between two blankets with sufficient cover, and have placed between the blankets a tub of as hot water as can be tolerated, in which the feet should be immersed from twenty minutes to one hour, and tub then removed. Every five minutes a cup of hot water should be added to maintain the high temperature of the bath. The good effects of both a foot and vapor bath are obtained. The patient sweats copiously, and should remain carefully wrapped until the perspiration subsides, the clothing and skin are dry; then the body should be massaged and anointed with vaseline once or twice every twenty-four hours for one or more days, if necessary. The function of the skin being arrested in acute catarrh, the inunction and massage cleanses the skin, invigorates the body, and fortifies the system against future invasions of acute inflammation of the upper air passages. If essential, the hot foot and vapor bath may be given every six or ten hours. A cup of strong hot coffee or tea, or even hot water taken, aid the diaphoresis; the former also acting as a fine diuretic. A hot lemonade or Dovers powder will also increase or continue the diaphoresis for some time after the tub is removed. If a cold is neglected it ends in chronic catarrh, or the subacute. Every cold weakens the system to a certain extent, and makes the patient more susceptible to future attacks unless properly treated, therefore abort or arrest an acute catarrh at once. ("At the commencement of a feverish cold a Turkish bath will cut the attack short, remove the aching pains and relieve the hoarseness at once. The Turkish bath will relieve or carry off the remains of a severe cold, as hoarseness, cough with expectoration and lassitude." Ringer.) In mild attacks of acute catarrh, anointing the integument with vaseline, and the free use of massage once or twice in twenty-four hours for one or more days, will abort an attack and assist the other medicines in accomplishing the same result.

Opium and its preparations check the secretions from all mucous membranes, and no doubt have a

specific effect in checking the acute inflammations and secretions of the upper air passages, and by allaying pain and cutaneous irritation and its diaphoretic action makes it or some of its preparations a valuable, if not the most valuable, drug that can be given in any stage of acute catarrh, more especially in the first and second stages. Opium should be given in $\frac{1}{4}$, $\frac{1}{2}$, or 1 gr. doses, and repeated every one, three or six hours, *pro re nata*. The various preparations should be given in small doses and repeated at the above intervals. It is often essential to combine quinine or belladonna with opium, one or both; the former in 2 to 5 gr. doses; the tincture of belladonna, gtt. iv-xv; extract, $\frac{1}{8}$ to $\frac{1}{3}$ gr., given at the same intervals as opium. When Dovers powder is given the bromide of potash should be substituted for the sulphate. Muriate of pilocarpine, gr. $\frac{1}{4}$ to $\frac{1}{8}$, will aid very materially the diaphoretic action of opium and arrest congestion of the respiratory tract. In the first stages of acute catarrh, nitrite of amyl or "glonoin" will often abort or arrest the disease. The most characteristic effect of this drug is its influence on the vascular system. It relaxes the whole arterial system and greatly reduces arterial pressure. The reduction of arterial pressure is due mainly to the great dilatation of the arterioles and, after large doses, to depression of the heart. Though it dilates the arterioles, they remain so a much shorter time than the arteries, and when the following symptoms are present in the first and second stages, viz.: chilliness, headache, lassitude, dryness of skin, cold feet, sneezing and photophobia, pain in the nasopharyngeal chambers, nitrite of amyl does good by flushing the integument and increasing the heat and perspiration of the head, face and neck; sometimes the increased warmth and perspiration affects the entire skin. Its effect is possibly due to its effect on the vaso-motor nerve trunks or on the muscular coats of the arterioles. In catarrhal, as in other inflammations, there is partial or complete paresis of the vaso-motor constrictors. The nitrite of amyl does not increase the paralysis of the constrictors of the vessels, but dilates the arteries and arterioles and allows circulation of the blood to be increased in other parts of the body, thereby equalizing the circulation and arresting inflammation. Trinitrine tabloids are preferable to the nitrite of amyl. The physiological effects of the former are continued a much longer time than the latter, and four to six doses, three to six hours apart, in twenty-four hours, maintain the physiological effects. Quinine is partly eliminated by the skin and respiratory membrane, and it arrests the amœboid and allied movements of the white corpuscles and is supposed to control inflammation by its destructive influence on the movements of the white corpuscles, and in the first and second stages of acute catarrhal inflammation will cut short an attack. Its action is

much increased by combining it with opium, belladonna or aconite. Quinine, by arresting the transmigration of the white corpuscles, prevents the formation of the pus corpuscles, and should be continued through the third stage of acute catarrh until resolution is complete. It is antiseptic, and in small quantities destroys septic germs, arrests putrefaction, renders the secretions aseptic, and is a valuable local application in the first, second and third stages of acute catarrhal inflammation of the upper air passages. A powder composed of quinine sulph., grs. ij; bismuth subnit., grs. ij; morphia sulph., gr. $\frac{1}{8}$; cocaine muriat., gr. $\frac{1}{8}$ to $\frac{1}{4}$, well triturated and blown into each nostril two or three times in 24 hours, will abort or arrest a cold quickly in the first and second stages and shorten the duration of the third stage.

Belladonna is one of the most efficient drugs that is used in the treatment of acute inflammations of the "upper air passages," and, given internally or locally, checks and even suppresses the secretions of the mucous glands and follicles.

"One of the centres of the sympathetic nervous system—the sphenopalatine ganglion—supplies branches to the lining membrane of the nose, throat, soft palate and Eustachian tube. It possesses a sensory, a motor and a sympathetic root. It is connected with the pneumogastric and facial nerves, and through its numerous connections an intimate sympathetic relation is established between the nose, throat, ear, larynx and bronchial tubes. Removal of this ganglion causes a severe catarrhal condition of the nasal mucous membrane. This membrane is continuous with that which lines the nasal duct and eyelids, the throat, Eustachian tube, middle ear, larynx, trachea and bronchial tubes. A congestion started in one portion of this membrane may extend to other parts." In acute catarrh there is, doubtless, a paresis of the sphenopalatine ganglion and other vaso-motor nerve centres. Belladonna acts specifically upon these centres which supply the glands and follicles of the mucous membrane. It not only arrests the normal supply of blood, but also an excess of blood to the inflamed tissues, and, by dilating the arterioles and arteries in other parts of the body, causes a determination of blood from the tissues involved, arresting inflammation, aborting the first and second stages of catarrh, and lessening the duration of the third. The physiological action of belladonna and its alkaloids is to cause a dryness of the Schneiderian membrane, pharynx, palate, tongue, larynx and trachea. In the second and third stages of acute catarrh this is a great desideratum. The effects of belladonna and its preparations are much increased by opium. Dose of the tincture of belladonna is grs. viij to xv for first dose, then gtt. iv to viij, repeated every two, four or six hours *pro re nata*.

"The power of aconite to control inflammation

and subdue the accompanying fever is remarkable. It will sometimes cut short an inflammation but will not remove its products, though by lessening inflammation it will prevent their formation, so saving the tissues from further injury." It is, therefore, in the early stages of inflammation more conspicuously serviceable, as in the first and second stages of acute catarrhal inflammation of the upper respiratory tract. "Aconite diminishes both the sensibility of the terminal ends of the nerves supplying the mucous membrane and the skin also. Moderate doses lower the pulse and respiration by its influence on the muscular substance of the heart or on the contained ganglia, and on the respiratory centres." Aconite increases the flow of blood to the skin, rendering a dry skin moist and perspiring; in this way heat is lost by radiation and evaporation. Fothergill states, aconite dilates the arterioles and greatly increases the capacity of the vascular system, and by this means drains the blood away from the inflamed organ; in fact, this drug bleeds the patient into his own vessels. As the vessels are already paralyzed leading to an inflamed organ, aconite does not augment the supply of blood to it.

In the first stage of acute catarrh, when rigors, a dry hot skin, dry mouth, tongue and nares, headache, pain in throat or nasal region, restlessness, lassitude, aching pains and stiffness, and photophobia exist, the quickened pulse and respiration become less frequent, and the temperature lowered, by the use of aconite in from six to forty-eight hours, and remain normal; in a few hours the skin becomes moist, and followed in a short time by free perspiration. On rhinoscopic and laryngoscopic examination it will be observed that the local manifestations of acute catarrhal inflammation will have subsided as magically as the constitutional.

How should aconite be given to have the desired effect? It must be given at the inception of the disease; every hour delayed is so much valuable time lost, as the malady will soon pass from the first to the second stage, or from the latter into the third. Half to one drop of the tincture should be given every ten minutes for two hours, in a teaspoonful of water, then hourly; or two or three drops every half to one hour for two hours, then every two or four hours. When there is a weak pulse and much prostration small doses must be given at longer intervals. Ringer states that in the treatment of inflammations the thermometer and aconite should go hand in hand. No acute inflammation can exist without preternatural heat. If the temperature is normal aconite is not indicated, otherwise it should be given. When the catarrhal inflammation is quite severe it is better to combine aconite with belladonna, both given in small doses frequently repeated.

In acute catarrh attended with much preter-

natural heat, headache, myalgia or orbital neuralgia, antipyrin in from three to five or ten grain doses, repeated every one or three hours, has proven to be a valuable addition to the physician's armamentarium of drugs.

Cold compresses to the throat when pain exists or deglutition is painful, and changed every hour until pain is relieved, or cloths wrung out of hot water and applied every ten to thirty minutes until pain is relieved are valuable local measures. When a rhinitis, or naso-pharyngitis exists, with orbital neuralgia, headache and photophobia, great relief is given by local applications to temples and forehead of menthol, either with the pencil, or menthol 3j-3ij, ethyl bromide or alcohol 3ij-3iv, made into a solution and painted over the pain. Should a catarrhal laryngitis or trachitis accompany the naso-pharyngitis, menthol applied over larynx and trachea in the first and second stages of inflammation, every four or six hours, or in the third or purulent stage blisters the size of a nickel over the larynx and trachea very materially hasten resolution. Catarrhal patients must be taught by the physician the importance of resorting to constitutional and local measures when a cold supervenes, and to abort it at once and hasten resolution, and the remedies to be used and always kept on hand. The patient when properly educated can abort a cold in from six to twelve hours when treatment is begun in the first stage, and can check it in from two to four days when begun in the second stage, and lessen the duration of the third stage.

Local Treatment of Acute Catarrh, or Cold, of the Upper Respiratory Tract.—Local treatment has three objects in view, viz.: 1st, non-irritation; 2d, thorough cleansing of the diseased surface with sufficient force to remove the morbid secretion; 3d, medication of diseased tissue without irritating or treating healthy tissue.

(In treating locally acute naso-pharyngeal catarrh the old adage, "*ubi irritatio, ibi fluxus*," must be kept in mind by both patient and physician.)

Treatment of the first stage should be as follows, viz.: Spraying the nasal chambers, or these and the throat, with a 2, 4, or 6 per cent. solution of muriate of cocaine, gtt. 10-30, one to three times a day, at intervals of eight hours, or absorbent cotton saturated with it and inserted into the nares and repeated every ten to thirty minutes until the desired effect is produced. Or, a 2, 4, or 6 per cent. mixture of cocaine can be made with vaseline and sprayed, after being warmed and melted, into the upper respiratory passages. Cocaine is an anæsthetic, anodyne, astringent and antiphlogistic. Vaseline is a mild, soothing astringent, antiphlogistic and aseptic, moistens the mucous lining in the first stage of acute inflammation and protects it against further injury. In this stage the mucous secretion is almost, if not en-

tirely, arrested for the time. Bosworth states there is poured out on the nasal mucous membrane in health from twelve to sixteen ounces daily of serum. This normal secretion is not perceived in health, being rapidly vaporized by the to and fro current of respired air. Doubtless there is equally as much secretion from the pharynx, larynx and trachea in health. When these organs are inflamed, in the first stage of acute catarrh, this secretion is arrested, and vaseline supplies its place and is either absorbed or oxidized, anyhow it is non-irritant, soothing and protective. Liquid applications to an acutely inflamed mucous membrane causes it to absorb moisture and the disease becomes aggravated, cocaine used locally will check a cold in from one to three days, and relieves hyperæsthesia, pain and reflex irritability at once. All local applications should be made with vaseline for the base, melted and liquefied, and sprayed while warm. Equal parts of vaseline and glycerine are very effectual in the first stage of catarrhal inflammation.

Very often acute naso-pharyngeal catarrh is attended with a catarrhal laryngitis, or laryngo-trachitis, and of all means that have been invented for making local applications to the air passages, Rumbold's spray-producers, Nos. 1-5, inclusive, for the naso-pharyngeal chambers, and 6-8 inclusive, for the larynx, are the best, excepting, only, Dr. A. DeVilbiss', of Toledo, Ohio. His spray-producer, by turning a point, can throw the spray in the same number of directions as the Rumbold instruments. With these spray-producers the medicine can be applied warm, the temperature of the respired air, and directly to the diseased surface, healthy tissue being avoided. Not more than 7-10 lbs. of compressed air should be used to make the spray, more than this will cause irritation and pain. A rhino-laryngoscopic examination should be made before each treatment, to ascertain what part of the respiratory tract requires the most treatment, so that the surface least affected will receive the least treatment, and *vice versa*. Every physician should be able to make a rhino-laryngoscopic examination, and know by inspection the pathological states of diseases affecting the upper air passages. On entering the practice of medicine the young physician should get a laryngoscopic "outfit," and familiarize himself with it, as it will be more frequently resorted to than any other instrument in his office. Rumbold's tongue-depressor is the best as it enables the patient to hold down his tongue and gives the operator the use of both hands.

In the second and third stages of acute catarrh the following medicaments are the best:

R	Vaseline	3j
	Olei eucalypti	gtts iij
	Acidi carbol	grs. ss-iiij
	℥ ft. mass.	
	Sig. melt and spray 3j-3ij.	

R	Vaseline	3ij
	Pino Canadensis (Kennedy's)	5¼ to ss
	Olei eucalypti	gtts ij-v
℞	ft. mass.	
	Sig. melt and spray half to two drachms.	
R	Vaseline	3ij
	Glycerine	3ss
	Acidi carbol	grs. ss-ij
℞	ft. mass.	
	Sig. Dose 3ss-3ij.	
R	Vaseline	3j
	Iodol	grs. v-x
℞	ft. mass.	
	Sig. Dose 3ss-3ij, melted and sprayed warm.	

The indications in the second stage is to check morbid secretion, render the parts aseptic, allay irritation, and absorb the inflammatory products. The treatment of the third stage is a continuation of the second, but since there is a muco-purulent or a purulent secretion, and abrasions from exfoliation of the epithelium exist it behooves the physician to use locally aseptic and antiseptic measures which have protective and rapidly-healing virtues. Mild solutions of nitrate of silver, grs. ij-grs. v, aquæ 3j, dose, ½ to 2 drachms, or weak solutions of bichloride of mercury, 1:5000, or 1:10,000, or tincture of iodine 3ij, glycerine 3ij-3iij, or Listerine 1 part, water 4-8 parts, glycerine 1-3 parts, should be warmed and sprayed to cleanse and medicate the catarrhal inflammation, followed by a vaseline spray. Insufflations of bismuth subnitrate or powdered yellow root grs. x-3ss combined with powdered lycopodium 3ss after vaseline is sprayed, assists in the protection of any erosion and hastens resolution.

THE PATHOLOGY AND DIAGNOSIS OF SO-CALLED PELVIC CELLULITIS, WITH SPECIMENS OF SALPINGITIS.

*Read before the Section for Clinical Medicine, Pathology, and Hygiene
of the Massachusetts Medical Society, Dec. 12, 1883.*

BY E. W. CUSHING, M.D.,
OF BOSTON, MASS.

Few diseases present a more constant and well-defined group of symptoms, both objective and subjective, than the inflammatory affection of the pelvic contents which is so well known under various names. In few diseases has the proper comprehension of the pathology, as derived from autopsies, been so long obscured by notions supposed to be founded on physical examination; in none has a just realization of the essential nature of the disease been followed by so brilliant and successful surgical measures.

Curiously enough, from early times there have not been wanting accurate descriptions of the diseases of the Fallopian tubes, as found at autopsies, but these were supposed to be affected as a consequence of pelvic inflammation, rather

than as being the essential and causative factor of the latter. It required the surgical genius and success of Tait and Hégar to bring the profession to realize that the diseased and swollen tubes, involved in a mass with ovaries, lymph, and perhaps pus, as described so accurately by Bernutz and Goupil in 1857, are verily the same lumps and "effusions" which we are all continually encountering in pelvic inflammations, and which under the teachings of eminent authority have been supposed to be outside of the cavity of the peritoneum, between the folds of the broad ligament, a supposed inflammation of cellular tissue, forming a so-called "pelvic cellulitis." Verily a case of *lucus a non lucendo*.

Perhaps it will be worth while to pause here a moment and enjoy the pleasure which delighted the pedantic Wagner, that of transporting ourselves into spirit of other times and observing how wise men have thought, in order to mark our own progress:

"Es ist ein gross Ergetzen
Sich in den Geist der Zeiten zu versetzen
Zu schauen wie vor uns ein weiser Mann gedacht.
Und wie wir's dan zuletzt so herrlich weit gebracht."

In the first place, it is often supposed that the ancients knew little or nothing of uterine diseases, had no works on the subject and left all treatment of such affections to ignorant midwives.

Nothing can be further from the truth. The most important uterine diseases have always been and always will be clinically the same, although the treatment has improved with the knowledge of pathology, and the advance of surgery due to the introduction of anæsthesia and the enforcement of cleanliness.

How graphic and true is the clinical description of pelvic inflammation by the father of medicine: "If the uterus is inflamed the menses are suppressed, and the vagina is mottled with many fine veins, like a spider's web, the fever is acute and causes delirium, and the menses when they reappear are scanty and unhealthy; if the patient eats anything she vomits, and pain invades the lower part of the abdomen, and the loins, and the patient faints, and shivers through her whole body, but the belly is sometimes hard and sometimes soft, and it is inflamed and swollen."

Then comes the description of the symptoms of subacute general peritonitis, which sometimes ensues, and the severe course of which is described; to this let me add the description of the results of local examination from Mercatus, the court physician of Philip II, of Spain: "If the posterior and superior part of the uterus is inflamed, there is pain in the parts around the navel, and sometimes we see them raised in a swelling, but there is worse pain in the loins and

¹ De virg. et vid. affect. et de uteri morbis, lib. ii. p. 606.

the excrements are passed from the bowel with difficulty, etc." "If the fundus is inflamed there is acute pain in the lowest part of the abdomen, so that the latter seems unable to bear any touch even externally, and the uterus is usually drawn toward the inflamed place, and this accounts for its os and collum being turned the other way. It differs from an hysterical attack in the ardent fever and intense heat of the part. If the anterior part of the uterus is affected a difficulty of urination or a stillicidium ensues, and there is severe pain in the umbilicus and the parts near and below the latter, and if the finger is placed against the os uteri it feels to the touch hard, closed, hot and retracted, especially if the inflammation is in the uterus itself or in its neck, and by the pain, hardness, and heat you will distinguish this condition from pregnancy.

But if the sides of the womb are inflamed the groins are tense, and the thighs are moved with difficulty and pain, and in some cases the leg on that side limps in walking, etc.

Then follow the symptoms of suppuration, with a graphic description of the severe cases and a description of the various ways in which the abscess breaks, the relief afforded thereby; the treatment with poultices,² sitz-baths, narcotics, vaginal infections, and vaginal suppositories, cotton tampons medicated with emollient and discutient decoctions, cupping and venesections, the latter only when the inflammation does not arise from abortion, nor from severe labor, or if the patient has not lost much blood.

"Universa etenim curandi phlegmones ratio in prohibitione ejus quod fit et ablatione ejus quod factum est constitit" ("For the universal method of treating phlegmons consists in preventing . . . tever is forming, and removing whatever has been formed.")

If resolution does not come on, suppuration is encouraged by appropriate treatment until it comes within reach, when it is to be opened after the surgical method of *Ætius*, which consists in cutting the integument with a knife and opening the abscess with a hot iron, placing the woman in a position favorable for drainage and washing the cut three times daily.

I have brought here several of my books in which the curious will find how various wise men have considered this subject before us. To understand them it is only necessary to remember that the uterus in general included the os externum or vulva, the vagina or sinus or cervix uteri, the os internum, now called externum, the collum or vaginal portion, as well as the tubes or cornua uteri, so called from the fancied resemblance to the horns of animals, situated on the uterus as the head; of course the tubes were well known before the description of Fallopius

from whom they now take their name. The question naturally arises as to how much better off is a woman with pelvic inflammation now than was one similarly affected in the time of Philip the Second. Probably in acute cases not much better off, as far as medical treatment is concerned. The disease is the same, the therapeutics are the same, except that the surgical treatment is now bolder, surer and better, under favorable circumstances and in the hands of experts.

But it may be said that these old fellows knew nothing of pelvic cellulitis; they laid all the trouble to inflammation of the uterus and its appendages; they did not know about the "areolar tissue."

That is where they were right, and where in modern times the greatest error has arisen. It is only within the last few years that really accurate views have again prevailed as to the nature of pelvic inflammation. That the Fallopian tubes could be diseased and adhere to the ovaries and to other parts has long been known.

In his classical work, which I have here, Fallopius says distinctly that the tubes are never adherent to the ovaries unless as the result of severe disease of the uterus:

"Nunquam observare potui meatus istos seminarios conjunctos cum testibus, nisi uterus male affectus fuerit. . . . Nam si in uno latere adfuit tumor aut cancer ejusdem etiam lateris testis ita contractus et colligatus cum dicto meatus apparuit ut connati simul viderentur, at oppositi lateris sami scilicet testis non ita se habere semper visus est. Sin autem utrumque latus erat affectum uterque meatus pariter conjunctus cum teste arme reperiebatur, hæcque bis aut ter ad summum vidi" ("I have never been able to find those seminal passages (tubes) joined with the testes (ovaries) unless the uterus was diseased; for if on one side there was a swelling or cancer, the ovary of the same side appeared so contracted and adherent to the said passage (tube) that they seemed congenitally united. But the ovary of the opposite healthy side never seemed to be in such a condition. But if both sides were affected each passage was found by me equally joined to the ovary; and this I have seen twice or at the most three times").

De Graaf,³ in his celebrated work, which I show here, figures Fallopian tubes deformed and occluded at their extremities.

After De Graaf, and quoting his work and that of Fallopius, came Ruysch, of Amsterdam, who in 1725 published at immense expense his treasury or catalogue of his wonderful museum. Fortunately I am in possession of a copy, which I have

² Make and apply to the lower abdomen a poultice of *fœnugreum*, pinseed, wheat flour, boiled figs, and turpentine.

³ A plate in the same work (De Graaf, "*opera omnia*," 1675), showing a tubal pregnancy copied from Vassalius, and properly interpreted, is interesting at this time. *Ann. of Gyn.*, December, 1888.

here. In *Anatomical Observations*, 43, 84, and 85, "Adv. Dec.," i. p. 6, Th. ix. 15.

He correctly explains and figures the occlusion and dilatation of the Fallopian tubes and their adhesion to the ovaries, due to inflammatory processes usually following difficult labors, and insists on the consequent sterility. He relates cases of puerperal fever with autopsies where the pelvis was full of foul matter apparently regurgitated or forced through the tubes from the uterus.

He insists on the frequency of inflammatory affections, and consequent great distension of the tubes, which he says he never would have believed if he had not made autopsies on so many women.

I will not take up any more time by quoting these old authors at length, but as they are overlooked in the modern references to the subject, I have thought it well to present their books to-night. It must be remembered that these works were in their time great authority, and were continually studied and quoted; the successors of these authors in Europe have therefore always preserved a just comprehension of the nature of pelvic disease, and descriptions of the various forms of salpingitis are scattered through the works of the pathologists and gynecologists of more recent times.

A very full bibliography of the subject is given by Prof. Wylie at the end of his admirable article on salpingitis in the recent "*American System of Gynecology*," edited by Prof. Mann.

It is needless for me to repeat it here. It is sufficient to say that about 1884, by the writings of Marchal de Calvi, followed later by Nongt (1849), and yet later by West, Simpson, and others, the seat of pelvic inflammation was located in the areolar connective tissue which surrounds the cervix and fills out the broad ligament.

On the other hand, Aran insisted that the masses felt during life and found after death were connected with the uterus and tubes. In 1857, and later, and more fully in 1862, Bernutz and Goupil described and explained the real nature of pelvic inflammation with precision and accuracy; by the courtesy of Dr. Sinclair I present their work to-night.

It now seems difficult to understand why their observations did not have more effect on the profession, especially as the discriminating mind of Thomas¹ very early supported their views with the weight of his authority, while Emmett has always upheld the doctrine of "pelvic cellulitis," and I believe is still unshaken in his opinions.

The popularity of the works of the latter author, the authority of his personal teaching, and the influence of the men who have studied under him, combined with the fact that the doctrine as taught seemed founded on the plain evidence of the sense of touch—all these causes conspired in

this country to smother the truth as taught by Bernutz, until the results of the autopsies described by the latter were supported and emphasized by the results of hundreds, ay, thousands of operations for salpingitis, where the evident "cellulitis" could be felt to disappear from the "broad ligament" as the operator shelled out a pus-tube and ovary from behind the uterus.

It is not always easy to understand what is meant by pelvic cellulitis, but as far as I comprehend the various authors, and as I previously understood the subject myself, it is as follows:

The course of cellular tissue in the pelvis is pretty well known. Something like a year ago I read before the Society, in connection with the subject of tubal pregnancy, a translation from Prandl² of the instructive work of Schlesinger, who, by injections of air and of liquid glue between the folds of the broad ligaments, near the tubes, showed that areolar tissue, loosely connected, ran between the folds of the ala vesperitilionis up along the psoas muscle, inwards around the cervix and between it and the bladder, outward to the inguinal ring and downward between the rectum and vagina. Now this is precisely the course taken by the pelvic collections of pus in seeking for an outlet; and when, on examination of a patient, a mass is found laterally and posteriorly to the uterus, nothing is more natural than to suppose that the hard mass is in the thickness of the broad ligament, and thus entirely outside of the abdominal cavity, below the peritoneum. If the mass enlarges it would be held that the peritoneum lining the cul-de-sac of Douglas is lifted up, still leaving the "effusion of lymph" extraperitoneal. If after death the ovaries and tubes are found diseased, in many cases it was urged that these were bad cases and therefore fatal; that here the tubes or ovaries were affected because they also were between the folds of the broad ligament, and more or less connected, on one side at least, with this areolar tissue. That, however, most cases which are not fatal, and which recover without suppuration, get well because the lymph in the areolar tissue is absorbed.

If the pelvic peritoneum is inflamed, it is held to be by extension of the disease from its point of origin between the folds of the broad ligament, around the blood-vessels and lymphatics.

This, as I understand it, is the doctrine of pelvic cellulitis or parametritis. It is plausible, fascinating, but, as I believe, entirely false, except perhaps in certain puerperal cases, where a rent, extending at the side of the cervix right into this areolar tissue, may become septic like any other wound.

How then shall we explain the symptoms? If the mass or masses which we feel are not in the broad ligament, where are they? If not effusions in the areolar or cellular tissue, what are they? In

¹ *Diseases of Women*, 2d ed., 1869, pp. 380, 381, *et seq.*

² *Ann. of Gyn.*, February, 1888, p. 224 *et seq.*

low, and above by adhesions and by coils of intestines. The hardness is caused by involuntary contraction of the muscles, and by tenseness of the cyst; possibly to some extent by an infiltration of the adjacent "areolar" tissue with oedematous fluid; the origin is in the tube and the cause is the "treatment."

Another group of cases too important to be more than mentioned to-night are cases classed as cellulitis which followed labor or abortion. Here again every one, in discussing the subject, admits a puerperal "cellulitis" of the "areolar tissue," but how many are seen post-mortem. Besides the cases of acute septicæmia, thrombosis, etc., when there is peritonitis what is found at autopsy? Just what Ruysch found (Obs. 43, 84, 85) a collection of foul matter *in the pelvis*, the tubes diseased and similar matter in the tubes and uterus. Most of these patients die; although in some the matters are shut out from the general abdominal cavity, a pelvic abscess results which is not between the folds of the broad ligament; if this matter is evacuated the diseased tubes remain, and may give rise to continual trouble afterward. In some cases a condition of comparative comfort results, but the diseased tubes can be detected long afterwards in very, very many cases in women who never recover their health perfectly.

Very lately, Tait has operated on a series of these puerperal cases. He reported eight in June last,⁶ with two deaths. J. Price (and perhaps others) has followed him in this country, having operated, as he writes me, on seven puerperal cases up to the present time, with two deaths. In all the cases there was no sign of disease between the folds of the broad ligament; salpingitis and pelvic peritonitis were what were found.

I saw myself one of M. Price's operations on a woman with pelvic inflammation after abortion, and I shall never forget the hugely distended pus tubes, large as Bologna sausages, which were shelled out, while the pelvis was full of stinking pus in pockets running up between the intestines in all directions; it was, as Ruysch said, "*colluries humorum non sine magno fœtore.*" Here is a great field in the future for the snatching of women from almost certain death by an operation which, *if not deferred until too late*, offers a good prospect of relief.

MEDICAL PROGRESS.

POISON IN THE BREATH.—MM. BROWN-SÉQUARD and D'ARSONVAL have reported to the Academy of Science the results of new experiments that show the poison or poisons which escape with the breath can become fatal in small quantities, even if not injected directly into the

venous or arterial blood. Injected subcutaneously the fluid containing this poison proved fatal to 17 out of 18 rabbits in doses of 16-44 cc.; in two-thirds death ensued in from 12 to 24 hours after the injection. But even when injected into the rectum and the stomach the liquid may cause death, but this occurred only in 2 out of 7 which had from 24-36 cc. introduced into the stomach. According to these eminent physiologists this toxic power is not ascribable to the presence of microbes in the fluid, for it is equally poisonous after it has been subjected to a temperature of 100°. They consider it certain that the carbonic acid in the breath has no share in its toxic qualities.

The ingenious apparatus which was used for these experiments consists of a number of metallic vessels which were made absolutely air-tight. An air-pump connected with a gasometer sends a continuous current through these vessels, which are connected with one another in such a way that the current of air passes them successively. Thus and animal placed in the vessel into which the outer air enters breathes the pure air, whilst all the other animals placed in the other vessels breathe air more or less vitiated. It is evident that the last animal breathes the air that has passed through all the other vessels, whilst the second animal, for instance, breathes the air of the first vessel only. Each vessel consists of a vertical cylinder of galvanized sheet-iron; large enough to hold a good-sized rabbit; a conical funnel receives the dejections of the animal and the remnants of food and dumps them into an earthen vessel likewise air-tight. Young rabbits (from 5 to 7 weeks old) which were shut up in these vessels died rapidly, except those in the first and second vessel. In some instances the rabbits in the 7th and 8th, and even that in the 6th perished in two or three days. On an average one week killed the animal in the 4th, and a few days later that in the 3d died. The rabbits in the 1st and 2d survived for a long time and finally died accidentally. When a rabbit which was almost dying in one of the vessels, 3, 4, 5, 6, 7 or 8, was taken out it generally revived and regained its health, but only after a long time. The quantity of carbonic acid which was considerably under 1 per cent. in vessel No. 2, was generally but little over 2 or 3 per cent. in vessels 6, 7 and 8. With a more rapid current there was sometimes even less carbonic acid in the last vessels.

"By numerous experiments we have assured ourselves that pure carbonic acid may be inhaled with the atmospheric air in considerable quantities by human beings, dogs, rabbits, and other mammaliæ. We have ourselves been able to breathe from one to two hours in an atmosphere charged with 20 per cent. of CO₂ without being noticeably affected, and especially without any lasting effect.

"By altering our apparatus through the addition of two supplementary parts we could introduce into the cylinder the air from vessel 6 after it had been subjected to the action of sulphuric acid. The latter takes up the pulmonary poison and the organic substances (whatever they may be) which issued from the first six vessels, whilst the carbonic acid becomes free. The air passing into the two supplementary vessels is therefore free from the pulmonary poison but charged with carbonic acid. Now this air is not fatal, and we possess in this fact a proof, at the same time, of the harmlessness of carbonic acid and of the toxic power of pulmonary poison.

"In these experiments death ensued in the same way as where the liquid was administered subcutaneously or otherwise; painless and almost without convulsions. The autopsy showed that the animal died from the stoppage of the exchanges between the tissues and the blood.

"The question arises whether the death of the animals in these experiments was due to a poison issuing from the lungs. It is easily answered. The symptoms and the condition of the organs after death are the same as those found in animals to which the fluid had been administered subcutaneously or otherwise. That there exists in confined air other causes capable of affecting health we do not deny, but it seems to us, for the reason above stated, that in these experiments death was due principally, if not exclusively, to the breathing of air which had been inhaled and confined for several days.—*Journal d'Hygiène*, vol. xiv, No. 651.

ESCHSCHOLTZIA CALIFORNICA.—In 1887 STANISLAUS MARTIN endeavored in vain, in the *Bull. génér. de Thérap.*, to call the attention of physicians to this plant, which is used as a sedative in some localities. More recently TER-ZAKARIANT, at the instance of Dujardin-Beaumetz, has made an examination of it which resulted as follows: *Eschscholtzia Californica*, of the family of *Papaveraceæ*, is a shrub-like plant indigenous to North America, and especially common in California, with no less than ten slightly different varieties. (Greene.)

One hundred parts of this plant yield an average of 20 grm. of an alcoholic, resinous, dark-green extract, of a pleasant smell and bitter taste, which is perfectly soluble with alcohol, largely so in water, only partly soluble in glycerine, and insoluble in chloroform and ether. In water 100 parts of the plant yield about 15 grms. of extract. This latter is reddish-brown in color, having the same smell and taste as the alcoholic extract; dissolves in water, alcohol and glycerine, but is insoluble in ether or chloroform.

Bardet and Adrian isolated from the plant a base contained in the drogue in lesser quantity, which they think is morphine, and in larger

quantity, an alkaloid, and a glycosoid. Experiments on animals made with the alcoholic and the watery extract showed that these extracts were effective only in comparatively large doses.

Doses of 2.5 gr. subcutaneously, and of 6.0 gr. internally pro kilo of animal were toxic. Smaller doses affect only the brain, the animal sitting motionless, deprived of will and entirely oblivious to their surroundings. Larger doses affect the medulla oblongata, the spinal marrow and the peripheral nerves. Constant symptoms are: general debility, torpor, acceleration of respiration, subsequent slowing of the same, complete paralysis of the extremities and slowing of the circulation. The sensory nerves are paralyzed after the motor-nerves and regain their sensibility sooner. The body-temperature is increased by the alcoholic-resinous extract and reduced by the extract when freed from resinous substances, by about 1° C.

After therapeutic experiments made with the alcoholic extract on 13 patients (chron. bronchitis, phthisis, morbus brightii, ischias, paralysis agitans, rheumatism), Ter-Zakariant designates *eschscholtzia* as a valuable and harmless somniferous substance, and as an analgesic extremely useful in certain cases, whose effect outlasts the time of its application and is free from the undesirable qualities of morphine. Large doses seem necessary: 2.5 to 10 gr. daily, even 12 gr. have been given.

Further experiments will be necessary to form a conclusive opinion regarding the value of this new remedy.—*Therapeutische Monatshefte*, March, 1889.

MICROÖRGANISMS IN THE GENITAL CHANNEL OF THE HEALTHY WOMAN.—WINTER publishes a careful work in which he attempts to answer the questions: 1, in what parts of the genital channel of the healthy woman are bacteria found; 2, of what kind are they; 3, are any among them pathogenic. In forty Fallopian tubes which were obtained during operations, no microörganisms were found. Of thirty extirpated uteri twenty-two were likewise found free from bacteria, whilst in eight cases they doubtless got into the uterus through previous digital or sound examinations. The cervix examinations made on living individuals showed microörganisms (cocci and bacilli); the latter largely increased in number during pregnancy. The same was true of the vagina. The inner os of the uterus forms, consequently, the border between the parts infested with bacteria and those free from bacteria. As regards the question of pathogeny, the pus cocci (staphylococci) were found in one-half of the cases in the secretions. But the experiments with vaccination proved them to be of lessened virulence, probably being weakened by the secretions of the other bacteria.

Of practical importance is the inference from

these tests that internal examinations of the uterus should be preceded by the most painstaking disinfection of the vagina and the cervix. It is shown that when substances subject to decomposition: blood, ovarian membranes and remnants of the placenta, are present in the uterine cavity, self-infection may take place through spreading of pathogenic germs from the vagina.—*Correspondenz-Blatt für Schweizer Aerzte*, March 15, 1889.

A RARE COMPLICATION IN INTESTINAL TYPHUS.—J. KARLINSKY (*Berliner klinische Wochenschrift*, 1888, No. 43) reports a case of typhus abdominalis in which, three weeks after the beginning of the disease, easily colored bacilli were found in the stools, which were nine μ long, single or arranged in chains of two or three links. In bouillon-cultures mostly 5–10 links appeared in a chain. In some of the bacilli spores could be distinctly seen. Subcutaneous injections of these bacilli killed young rabbits within two days. In the lymph of the animals, as also in the blood-vessels of the liver, the author found the same bacilli—which he takes for milzbrand-bacilli—in large quantities. Besides these microorganisms, streptococci and smaller bacilli were found in the fæces in small quantities. The patient died in thirty days from the beginning of the sickness.

The examination of the lower ileum and of the cæcum showed typical typhus abscesses, in the stomach and the remainder of the small intestine changes were found such as are occasionally seen in milzbrand. In the blood from the liver, in the spleen-veins, the veins on the surface of the stomach, in the spleen-juice, abundant milzbrand-bacilli were found. On gelatine and agar-cultures typical milzbrand colonies developed. The liver, the intestinal wall, and a part of the mesenteric glands contained large numbers of milzbrand-bacilli, whilst in the abscesses in the lower ileum and cæcum typhus-bacilli were found.

The author ascribes the milzbrand infection to the circumstance that the patient on the twentieth day had taken some milk which, as was proven on a searching investigation, had come from a cow affected with milzbrand.—*Centralblatt für Bakteriologie und Parasitenkunde*, Band v, No. 12.

ABOUT THE TREATMENT OF DIPHTHERIA WITH ACID SALICYL.—In a paper read Dec. 5, 1888, by PROF. D'ESPINE, before the Medical Society of Genf, the author explains a mode of treating diphtheria which—based on bacteriological investigations—he has pursued with the aid of Dr. de Marignac. These investigators found that Löffler's bacillus, which they consider as pathogenic for diphtheria, is killed by five minutes' contact with salicylic acid dissolved in water 1:2000. This substance is consequently used in the local treatment of diphtheritic affections of the throat, the false membranes of the naso-phar-

ynx being irrigated every hour or every two hours with a $1\frac{1}{2}$ or 2 per cent. solution of salicylic acid. The irrigation was made through the mouth by means of an irrigator or a pear-shaped syringe, so that a sharp stream of the liquid bathed the false membranes; for the nose it was deemed sufficient to pour tablespoonfuls of the solution into it; from 1 to 2 litres of the solution are to be used in the first twenty-four hours of treatment. The method of irrigation has the advantage of an energetic application of the remedy without causing injury and opening gates for infection. A few hours of this treatment are said to be often sufficient to break up the fever, and after two or three days the throat usually throws off the false membranes. An early beginning with this treatment is of importance; the author recommends, in cases of epidemics of diphtheria, to treat prophylactically cases of apparently simple angina in the same manner.

Even before d'Espine salicylic acid has been used for diphtheria, but the application of large quantities of liquid by means of an irrigator is new, and this mode of application seems to prove very effective in practice. E. Kummer, of Genf, has found the treatment decidedly beneficial in several cases, and invites further experiments.—*Correspondenz-Blatt für Schweizer Aerzte*, March 15, 1889.

CONCERNING THE ETIOLOGY OF PUS-FORMATION.—JUL. STEINHAUS, in the *Zeitschrift für Hygiene*, Bd. V, Heft 3, reports that he found in the contents of an abscess large quantities of the well-known micrococcus tetragenus, whilst the bacteria usually occurring in pus, staphylococci and streptococci, were altogether missing. Steinhaus thinks, therefore, that the micrococcus tetragenus, under certain conditions, might become a cause of purulent processes in man.

The experiments which led him to take this view cannot be considered as conclusive proofs, as he failed to establish such a result through plate culture. Steinhaus made only "two tube-cultures on gelatine" directly from the pus, and thereby made the same mistake which, though often sharply criticised, is repeated over and over again. In the examination of the pus plate-cultures would now show us, perhaps, preponderating colonies of the micrococcus tetragenus, but also here and there some of the streptococcus, and would thus point out the real condition of affairs. In tube-cultures, however, the rapidly growing micrococcus tetragenus strangles the slowly growing streptococcus and deprives it of the ability to make itself known in any way, so that an erroneous conclusion becomes unavoidable.—*Centralblatt für Bakteriologie und Parasitenkunde*, Band V, No. 12.

THE

Journal of the American Medical Association

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00

SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, APRIL 20, 1889.

INFLUENCE OF CLIMATE ON PHTHISIS.

In THE JOURNAL of last week attention was directed to the reprint edition of DR. CHARLES DENISON's paper on the "Preferable Climate for Phthisis," read in the Section of Demography of the Ninth International Medical Congress, Washington, 1887. Attention was then directed to the chief elements that, in varying combinations, determine the special character of the climate in any given locality. The combination of these elements claimed by Dr. Denison as constituting the preferable climate for patients affected with phthisis is, purity, rarefaction, dryness, coolness, variability, uneven or mountainous surfaces, with gravelly or porous soil. The purity of the atmosphere or freedom from intermixture with foreign ingredients increases with the altitude above the sea level, and according to the observations of Miquel, becomes entirely free from bacteria or organic germs at an elevation above 2,000 metres (ft. 6,560). At 560 metres (ft. 1,700) he found only 8 bacteria to 10 cubic metres of air, while in the streets of Paris, near the level of the sea, he found no less than 55,000 to 10 cubic metres of air. The observations were all made in the month of July, 1883. It may be inferred, therefore, that the higher altitudes are very unfavorable for the propagation of bacillus tuberculosis, as well as ordinary bacteria.

The greater the rarefaction of the air, the less amount of oxygen is contained in a cubic foot, and the more active the respiratory movements become in order to supply the blood with the re-

quired amount of oxygen in a given time. It is this increased activity of the respiratory movements in breathing the rarefied air of high altitudes that tends strongly to expand the chest, and makes it specially beneficial to those young persons with chests flattened beneath the clavicles and plainly predisposed to phthisis, and to all cases while in the stage of primary unsoftened tubercular deposit. But when the capacity of the lungs is already diminished one-third or one-half by extensive tubercular infiltrations in the stage of purulent softening and hectic fever, or by the sclerosis of pulmonary tissue called by some chronic interstitial pneumonia and by others fibroid phthisis, it becomes impossible for the patient to inhale the necessary increased quantity of rarefied air, and persistence in the attempt generally hastens the fatal result. The coolness and dryness of the atmosphere generally increases with the altitude, and are usually found in coincidence with rarefaction. It is a familiar law that the dryer the air at a given temperature the more rapidly will it absorb aqueous vapor from moistened surfaces. Hence if we inhale an atmosphere already saturated with moisture it will return by exhalation in the same condition, having absorbed nothing from the moistened pulmonary surfaces. On the other hand the dryer the air inhaled the greater will be the amount of aqueous vapor and such other matters as may be in solution therein, that will be absorbed and removed with the exhaled air. That Dr. Denison is correct in claiming that cool and variable atmospheric conditions are more beneficial to consumptives and other debilitated patients, than warm and uniform conditions are, we have no doubt. Continuous heat expands the tissues and thereby causes relaxation and debility; while continuous cold constricts or condenses the structures and soon lessens the activity of all the functions. Coolness, with frequent variations within moderate limits, contributes far more to the maintenance of functional activity and strength, and thereby acts in harmony with rarefaction and dryness at high altitudes.

Without pursuing these elementary considerations further, we may suggest the following rules for the guidance of the practitioner in his dealing with the question of climates and phthisis:

1st. Ascertain by thorough physical examination the degree of development of the chest and

the actual condition of the lungs in reference to the existence of tuberculous deposits or other structural changes, their extent and stage of progress.

2. If the patient presents only a narrow chest and defective muscular development without appreciable changes in the pulmonary structures, a residence in the pure, cool, dry, rarefied and variable atmosphere of the mountains at altitudes between 4,000 and 6,000 feet, at almost any point between Manitau in Colorado and San Antonio in Texas, with an outdoor occupation, will be most certain to establish in him a healthy, vigorous physical condition.

3. If the patient is found to have only a moderate amount of crude unsoftened tubercular deposit; or if he has deposit in the softened and suppurative stage limited strictly to the apex or upper part of *one* lung, leaving the other lung healthy, and his total lung capacity for air not diminished more than one-tenth, his chances of recovery will be secured in the highest degree by a residence in the same climatic conditions named in the preceding paragraph. The patients indicated in this and the preceding paragraph will also generally be restored by long sea voyages extending through a wide range of latitude, provided they take such daily exercises of the muscles of the chest and arms as will favor increased capacity of the chest.

4. If the patient is found to have pretty extensive tubercular deposits in both lungs, with distinct indications of commencing softening, the chest capacity for air diminished one-fifth or more, and more or less fever, he cannot be safely sent at once to the high altitudes of Colorado, New Mexico, etc. As pure, dry and mild air as can be found at lower levels should be chosen. The more moderate altitudes found in the mountain districts of North and South Carolina, Georgia and East Tennessee for the summer, and the interior of Florida, southern part of California and some parts of Texas for the winter months, are best suited to such a patient, and will often arrest the further progress of the disease.

5. If, however, a careful examination of the patient shows extensive deposits or consolidation involving one-half or even one-third of both lungs, with suppurative cavities in both, copious purulent expectoration, hectic fever, and extreme emaciation, he should be candidly advised to make

himself as comfortable as possible at his home and with his friends, if he have any, instead of exhausting what little breathing capacity he has left in a vain struggle to reach a better climate and finally perishing among strangers.

6. To whatever climate it is deemed best that a patient should go, if it is found to influence him favorably, he should be strongly advised to take up his residence there from one to five years at least. One of the most important causes of failure to get permanent recoveries by change of climate, is the persistency of patients in returning home and to the same habits and surroundings as before, as soon as the more manifest and troublesome symptoms of disease have subsided; and consequently, in four cases out of five, the disease renews its advancement after a few months.

MILROY'S MEDIO-TARSAL AMPUTATION.

Under this title was published, in *THE JOURNAL* of March 30, in the columns for Medical Progress, the report of a case copied from the *Glasgow Medical Journal*, of March, 1889. The case was one of medio-tarsal amputation performed on account of severe injury of the foot, by DR. MILROY, of Kilwinning, Scotland, September 7, 1885, and reported by him to the Surgical Section of the Medico-Chirurgical Society of Glasgow, January 25, 1889. It was spoken of as a *new* operation, and its advantages compared with those of the operations of Chopart, Syme and others.

Since the appearance of Dr. Milroy's case in this journal, our attention has been called to the fact that an operation nearly identical with it, had been performed several times prior to 1874 by DR. S. F. FORBES, of Toledo, Ohio, and the operation fully described by him in a paper read at the annual Meeting of the Ohio State Medical Society in 1874. The report was published in the *Transactions of the Society* for that year, illustrated by a cut; and to do justice to Dr. Forbes we renew attention to his work by making the following quotations from his paper. He describes his operation as follows:

"The flaps being made as in Chopart's operation, that is by an anterior and posterior flap, one horn of which should commence on the inner side of the foot opposite the tubercle of the scaphoid bone, and the other terminate on the outer border

or tubercle of the cuboid, and the flaps, being well reflected back, the knife, a stout, straight bistoury, should be entered between the scaphoid behind and the internal cuneiform bone in front, and carried outward between the cuneiform bones and the scaphoid until the cuboid is reached. Twisting the foot well outward with the left hand of the operator will facilitate the movement of the knife along the articulations mentioned. Having arrived at the cuboid the knife should give place to the saw, when the cuboid should be sawn squarely across, and the operation is completed. Should any difficulty be experienced in passing the knife along the external cuneiform the saw can at once be resorted to, and any portion of this bone which may be left in the stump can readily be dissected out. . . .

"By examining the bones of the foot it will be seen that where the scaphoid and a portion of the cuboid is left in the stump (as in this operation I am describing) each bone has a bold prominence or tubercle on its under surface which is of great service to the patient in walking ever after, a point not to be lost sight of by the surgeon."

After describing certain items of after-treatment and modes of dressing, Dr. Forbes sums up the results and advantages of his operation as follows:

"There are several persons in this vicinity upon whom the operation I have spoken of has been performed, when wearing an ordinary shoe with the front filled with cork, whose gait and carriage are so steady that it would be quite impossible for even a surgeon to say upon which limb the operation had been performed. These persons engage in railroading, farming, etc., without crutch or cane, and with so little inconvenience, apparently, as not to notice they have suffered any loss.

"The points I seek to make in this paper are, that I propose an operation which is easier of execution than any other recognized amputation through the tarsus, that the stump resulting is as good as that left after Hey's operation, and that by reason of leaving the tubercles of the scaphoid and cuboid bones it is always better than the stump left after Chopart's operation; further, that the bony column behind the cuneiform bones should never be sacrificed to the demands of coverings except in cases of imperative necessity; and, lastly, that upon the treatment after the op-

eration depends in a great degree the future usefulness of the limb."

The critical reader will observe that Drs. Forbes and Milroy both separate the scaphoid from the cuneiform bones, the former completes the operation by sawing directly through the cuboid, while the latter disarticulates it.

THE ILLINOIS STATE BOARD OF HEALTH AND THE STATE LEGISLATURE.

The House of Representatives of the Illinois State Legislature appears to have developed a decided opposition to the State Board of Health, by striking out of the general appropriation bill all provision for the support of the Board for the next two years, and by a proposition that is still pending, to repeal Section 11 of the Medical Practice Act. This Section is the one prohibiting all traveling or itinerant medicine vendors to ply their vocation in the State unless they obtain a license from the State Board, for which they must pay \$100 per month. From the tenor of the discussions in the Legislature, it appears that the opposition originates mainly from the idea that the Board has been interfering too much with the sacred right of the people to be *humbugged*; and with the equally inalienable right of medical impostors to obtain money under false pretenses. While we think the Illinois State Board of Health might have done more to educate the people of the State in sanitary matters by adopting some of the methods practiced successfully by the Michigan State Board, and that some of the provisions of the law could be greatly improved by judicious amendments, we can find no apology for the present line of opposition developed in one branch of the Legislature. If a State law for regulating medical practice and protecting the public health is defective, amend it. If the law is useless, repeal it. If the Board appointed to execute the law is inefficient, reorganize it. But do not adopt the disreputable method of starvation by withholding supplies.

EDITORIAL NOTES.

DEATH OF M. CHEVREUL, the oldest, and one of the most eminent chemists of France, at the age of 103 years. A press despatch, dated Paris, April, 9, 1889, makes the following announcement:

"M. Michel Eugene Chevreul, the distinguished

French chemist, is dead. He was born in Angiers Aug. 1, 1786. Having completed his studies in the Central school of that place, at the age of 19 he went to Paris, where he was engaged in the chemical factory of the celebrated Vauquelin, who discovered in his young pupil such aptitude and sagacity that he intrusted the direction of his laboratory to him. In 1810 he was preparator of the chemical course in the Museum of Natural History, and in 1813 was appointed professor in the Lycee Charlemagne, and officer of the university. In 1824 he was made director of the dyeries and professor of special chemistry in the carpet manufactory of the Gobelins, where he had leisure to follow his favorite pursuits into detail, one of which was his investigation of animal oils, or grease. In 1823 M. Chevreul published a work on this subject, for which the Society for the Encouragement of National Industry awarded him the prize of 12,000 francs. M. Chevreul has written various scientific works, some of which have been translated into various European languages. M. Chevreul had contributed to the proceedings of scientific societies, to dictionaries, and to other works. In 1830 M. Chevreul succeeded his former master, Vauquelin, in the Chair of Chemistry at the Museum of Natural History, since which time he has become Fellow of the Royal Society of London and President of the Society of Agriculture. In 1864 he was appointed director of the Museum of Natural History for five years, and in 1869 reappointed for another quinquennial period. He was made Commander of the Legion of Honor Sept. 24, 1849."

DR. EDWARD T. BRUEN, Assistant Professor of Physical Diagnosis in the University of Pennsylvania, died of pneumonia, March 31, 1889, at the early age of 39 years. He was the author of a creditable work on the "Physical Diagnosis of the Heart and Lungs," and visiting physician to the Philadelphia and German Hospitals.

A PROBLEM IN MATHEMATICS.—If all the sources of water supply to the chain of great lakes to which lake Michigan belongs remain the same, and the present avenues of exit the same, while a new channel is cut from the lake just named southward, permitting the constant discharge of 500,000 cubic feet of water per minute, how long would it take to lower the water level in the lakes three feet, and to what extent would

such change in the lake level diminish the rate of discharge through the artificial channel?

THE MEDICO-CHIRURGICAL FACULTY OF THE STATE OF MARYLAND will hold its next annual meeting in Baltimore, Md., commencing on Tuesday, April 23, 1889, and continue three days. The Annual Address is to be delivered by Prof. Wm. Osler, of the Johns Hopkins University, on the "License to Practice with reference to State Examining Boards."

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, January 23, 1889.

THE PRESIDENT, W. W. KEEN, M.D., IN THE CHAIR.

(Concluded from page 532.)

DR. EUGENE P. BERNARDY read a paper on
BINIODIDE OF MERCURY. ITS ANTISEPTIC USE.
OBSTETRICAL CASES.

Case 1.—Mrs. L., æt. 19, first pregnancy; was called to attend her (January 24, 1886) in a premature labor; she was pregnant about six and a half months; when I arrived, I found she had been delivered of a dead male child; the placenta came away in two hours; the patient did well up to the evening of January 27, when she was taken with a chill, which was repeated in three hours; when I saw her on the morning of the 28th, her skin was hot and dry, face flushed, pulse 112, temperature 102;° tongue thickly furred, abdomen slightly swollen and very sensitive; lochia offensive. Ordered quinae sulph., gr. xx.; morphine sulph., gr. ¼ night and morning; poultice over abdomen, and hot vaginal injections of 1 to 4,000 solution of the biniodide of mercury every four hours; at the second injection the discharges became free from any odor. January 29, pulse 100, temperature normal. This treatment was kept up, with the exception of the large doses of quinine, to October 5, when the injections were reduced to one a day for about four days, when the patient was discharged cured.

I have confined this case since of a full-term, living child; the biniodide injections were used at once; she had a good lying-in; discharged on the ninth day, well. (The above case really belongs to my second series, but the manuscript was mislaid at the time, and found too late to be incorporated in my second paper.)

Case 2.—Mrs. M., æt. 35; fifth confinement;

during her pregnancy she had worked very hard, doing almost the work of a man. Was called to attend her in labor, March 18, 1886; when I arrived at her bedside I found she had been in labor since the previous day; she appeared completely worn out, having hardly any strength to bear down; the family refused positively instrumental interference. I gave two doses of the fluid extract of ergot, teaspoonful, repeated in half an hour; under its influence the child was born; the placenta soon followed.

The patient did well up to March 24, when, in the evening, she had a severe chill, which again occurred the following morning (March 25). I saw the patient on the following day; She seemed to have aged fully ten years; her face was drawn, and of a deep yellow color, eyes bright and sparkling with delirium; pulse 140, temperature 105°; the abdomen was immensely swollen, and could not bear to be touched, more especially on the right side. Diagnosed metro-peritonitis. Lochia arrested. Ordered quiniæ sulphatis, gr. xx, night and morning; morphia sulphatis, gr. ¼, whenever pain was severe; hot poultice over the abdomen, hot vaginal injections of 1 to 4,000 solution of biniodide of mercury. March 28, pulse 120, temperature 101°; lochia returning, abdomen not so sensitive. This treatment was continued up to March 31; the abdomen now allowed of closer examination; in the right inguinal region could be detected a large mass; vaginal examination showed the uterus bound down and completely surrounded by lymph. Dr. W. Goodell, being called in consultation, verified the diagnosis. The biniodide injections to be continued; internally, quinine sulph., gr. iij three times a day, besides an alterative tonic. The patient gradually recovered her health, without any additional treatment.

In this case the injections of the biniodide were constantly used for over a space of three weeks, first every four hours, then three times a day, then once a day, without the slightest systemic action of the drug occurring.

Case 3.—On July 11, 1886, I was asked to see Mrs. W., in consultation with her family physician; on entering the house a most sickening odor struck my nostrils; it reminded me of uterine cancer in its last stage; the more I advanced, the worse the odor became; at last I reached the room and bedside of the patient; of all odors I never want to smell the like again; as the nurse remarked, it was worse than decayed carrion; how the patient lived through such a condition was simply miraculous.

I found she had aborted about two weeks previously, and had declined any interference in regard to extracting the placenta, saying, "it will come away." On examination, I found the vagina full of sticky, horribly-smelling, broken-down placental tissue, the mouth of the uterus opened,

the uterus full of the same kind of material as found in the vagina; the patient declined the use of any instruments, so I broke down and pulled out all that came within reach of my finger; I then washed out the uterus with a hot 1 to 4,000 solution of the biniodide of mercury; not yet satisfied, I washed out the parts with another quart of the solution (1 to 4,000, until the water came back clear.

I did not see the case again, and, in answer to a letter to the attendant physician, I received the following:

"Philadelphia, May 20, 1887.

"My Dear Doctor: I am glad to inform you that Mrs. W. did very well. The *iodide of mercury pellets* acted like a charm. There was no unpleasant odor attached to the discharges after we began their employment. . . . I have been an ardent advocate of potassium permanganate, but I am now a convert to the biniodide as an antiseptic."

Case 4.—Mrs. H., primipara, æt. 30, fell in labor November 18, 1886. On my arrival at her bedside I found she had been in labor for some time, the mouth of the uterus wide open, bag of waters unruptured, vertex presentation. On making abdominal palpation, detected at once a twin pregnancy. After a somewhat lingering labor the first child (boy) was born. On examination, I found the second child (girl) presenting with vertex left posterior. The head came down very slowly, and, on the solicitations of the patient and family, the labor was terminated with forceps. The patient did well up to the evening of the second day, when, about midnight, she was taken with severe frontal headache and chills. I saw the patient in the chill; half an hour after her temperature was 104°, pulse 140; delirious. Ordered quinine sulphat., gr. xx, at once, and repeat next morning. Next day (November 21), temperature and pulse the same, completely out of her mind; lochia almost ceased flowing, and what was present was offensive; abdomen extremely sensitive to the touch. Ordered the quinine to be continued, gtts. x tr. digitalis four times a day, hot flaxseed-meal poultices over abdomen, hot injections in the vagina of 1 to 4,000 biniodide of mercury every four hours. The following day the lochia returned normal. The condition of things remained about the same up to November 25, when the symptoms were improved. The patient was discharged well December 4, 1886.

(The following case is the first patient on whom I used the biniodide of mercury injections, and whose history is given in my first paper, June 4, 1885.)

Case 5.—Mrs. D., third confinement (being compelled to leave the city, she fell into the hands of another physician), fell in labor September 6, 1886. After a lingering labor she was delivered

of a stillborn child. On the second day, as far as I can learn, all the symptoms of an attack of puerperal fever set in; she remained very sick for several days. No vaginal injections of any kind were used. When I saw the patient, on September 19, 1886, she was suffering with an extremely tender abdomen, more especially on the right side, on which side could be detected a small lump. Vaginal examination disclosed the uterus partially surrounded by lymph. Discharges from the vagina very offensive. Pulse 100, temperature 101° – 102° . Nothing could be retained on the stomach; as a drink, frozen champagne was ordered. Quinine sulphate, gr. x, once a day; equal parts of ungt. hydrarg. and belladonna to be rubbed over the abdomen once a day, followed by hot poultices, hot injections of the 1 to 4,000 biniodide three times a day. My following visit found my patient improved, and in a week was discharged, but it was some time before she regained her usual strength.

On November 1, 1887, I delivered the above patient, after an easy labor, of a large female child. Immediately after the placenta came away I washed the uterus out with a 1 to 4,000 injection of the biniodide. The injections were ordered to be used three times a day throughout the lying-in, which was perfectly normal, and the patient discharged, well and strong, on the ninth day.

Case 6.—Mrs. C., æt. 19; first pregnancy; was called to attend her on the morning of August 19, 1888. After an easy labor she was delivered in the afternoon of a large male child; the placenta came away in about twenty minutes. The following day the patient was doing well, but had not been washed, and the odor in the room was very disagreeable. On my following visit I found the patient in a high fever, temperature 103° , pulse 130, full and quick; tongue dry and chippy. The skin from the posterior part of the vulva back to beyond the anus was raw and covered with minute bloody points; abdomen very tender; lochia, what there was, extremely offensive.

On close inquiry I found that the mother of the patient, who was supposed to be nurse, had gone on a drunken debauch since the birth of the child, no doubt celebrating her "grandmotherhood." The patient was placed at once in charge of a competent nurse; hot poultices were ordered to the abdomen; quinine sulph., gr. v, morphia sulph., gr. $\frac{1}{4}$, every four hours; hot injections in the vagina of 1 to 4,000 biniodide of mercury every three or four hours. Equal parts of zinc ointment and Goulard's cerate were applied over the raw surface.

August 24, pulse 110, temperature 101° ; lochia coming freely and without odor. August 26, pulse 100, temperature 99° ; 4 P.M., pulse 100, temperature 101° . Condition better, treatment continued; patient discharged, entirely cured, September 1, 1888.

With the three cases reported in my first paper, eight in my second, and the six cases just detailed, in all, seventeen (obstetrical) cases in which the biniodide of mercury had been employed, gives us, certainly, sufficient data to draw positive conclusions.

ABDOMINAL ABSCESS INTERCURRENT WITH TYPHOID FEVER.

Case.—On April 20, 1887, I was requested to see Mary B., aged 5 years. The little patient had been ailing for the past week, suffering from constant frontal headache, very feverish, loss of appetite, and having a diarrhœa. I found her in bed, with a temperature of 103° , very quick, compressible pulse, tongue dry, and a number of rose-colored spots over the abdomen and chest. The case was running the ordinary course of typhoid fever, when, on May 5th, the child was taken with a sudden, sharp pain in the right iliac region; my visit found the child suffering agonizing pain in the abdomen, which was tense and swollen; in the right iliac region could be felt a lump the size of an egg; under appropriate treatment the acute pain somewhat subsided. On May 8th my attention was called to the navel, which had become red, inflamed and pouting; on touch a feeling of fluctuation was imparted to the finger. May 10th, the child passed from the bowels a large quantity of pus; the angry appearance of the navel disappeared, all acute symptoms seemed abated. On my visit of May 12th I found the navel again inflamed, with positive indications of pus underneath; the following day it broke, discharging about a cupful of pus. I now suggested a consultation in regard to the advisability of an operation. It was declined. Same condition continued up to the first of June; the child by this time had become greatly emaciated, constant discharge of pus from the navel, and symptoms of septic poison were commencing to show themselves. At last, on June 12th, consent was given to an operation. June 13th, Drs. Allis, F. Elder and C. Reed were present. The patient was etherized by Dr. Reed, after a close examination, and taking the weakened condition of the child into consideration, and also that the abscess cavity having made an opening at the navel, it was decided that, instead of opening the abdominal cavity, a counter-opening in the left iliac region be made and a drainage-tube extending from the navel to it be introduced, and the abscess cavity washed out. I washed out the abscess cavity through the tube with a two-quart solution of 1 to 4,000 biniodide of mercury; the abdomen was then covered first with biniodide gauze, over which was laid a layer of biniodide wool, all held in position by a bandage that had been washed in a 1 to 4,000 solution of the biniodide of mercury. The abscess cavity was ordered to be washed out morning and night with a 1 to 8,000 solution of the biniodide; the child

rallied well from the effects of the ether. While washing out the cavity, on May 17th, a piece of straw came through the drainage-tube. May 22d, discharge of feces through the lower end of the tube; which occurred two days in succession; for the following ten days, when the child partook of food, more especially if this was an egg, within a half hour some of it partially digested would appear at the end of the upper part of the tube; if the discharge occurred later than a half-hour it would appear at the lower end of the tube; this clearly demonstrated a fecal fistula in connection with the abscess cavity. Gradually all discharges ceased; and the tube was taken out July 23, 1887; a week later both openings were closed, but it was several months before the child could resume her ordinary diet; apples would inevitably bring on severe colic.

None of us at the time of the operation went further than to "hope" that the little patient would get well. The case demonstrates well the antiseptic properties of the biniodide. It was an extremely warm month, and, with the exception of the two or three days on which the feces passed down through the tube, the odor of the discharges was held in abeyance.

Double Laceration of the Cervix.

Case.—Mrs. F. had a large, double laceration of the cervix following a natural labor. I first saw the case in May, 1885, and advised operation. Operated October 5, 1885. Extensive denudation had to be made; fourteen silver stitches were necessary; hot water was used to cleanse the parts during the operation. On the second day a very offensive bloody discharge occurred. The vagina was washed out with a hot 1 to 4,000 solution of the biniodide of mercury three times a day; at the first injection all odor disappeared, and did not return throughout the rest of the treatment; the stitches were taken out on the tenth day, with perfect union.

Abscess of Right Foot.

Case.—In February, 1887, I was called to see Master McG. About a week previous a heavy box fell on his foot; painful at the time, but not painful enough for him to give up his work, he continued to work up to February 10, 1887; on the previous evening his foot became swollen and painful; under poultices the inflammation centred, and on February 20, the abscess broke. The opening was stubborn to heal; offensive pus was discharged; every day I injected the cavity with a 1 to 2,000 solution of the bichloride of mercury and packed; this treatment was kept up for ten days without any change; the bichloride was then changed to a 1 to 4,000 solution of the biniodide of mercury, the discharges were made pure, and in the course of another ten days the opening closed, but the foot remained tender for several weeks.

Abscess Extending from the Right Axilla down the Right Side to One Inch below the Floating Rib.

Case.—W. S., æt. 30, barber, of scrofulous habit, somewhat dissipated, having a wart on the right middle finger, picked it with his fingernails; the result was an acute inflammation of the entire arm. I saw the case July 16, 1888; under cooling applications, the inflammation soon abated. About July 21, 1888, the right side, extending from the axilla down to midway between the last rib and the crest of the ilium became intensely inflamed; the pain was excruciating, and large doses of sulphate of morphia gave only momentary relief; large flaxseed poultices liberally sprinkled with laudanum were applied. On the 24th I detected fluctuation at the lower border, made an exploratory incision, and obtained half a cupful of fetid pus and broken-down blood; this gave slight relief. On the 26th the pain returned tenfold; the same evening, the patient having been etherized by Dr. S. Solis-Cohen, I enlarged the previously made incision to three inches, and about half a pint of extremely fetid pus was discharged; the finger was then introduced, and two encysted pus sacs, situated at the edge of the scapula, were ruptured, and another half pint of pus was discharged; the cavity was then washed out with a 1 to 4,000 solution of the biniodide of mercury, a drainage tube introduced, flaxseed poultice applied, and over all a layer of biniodide wool.

Next day I found the patient had had a good night's rest; I removed the poultice; cavity to be washed out three times a day with the biniodide; drainage tube taken out on the fourth day, and within a week the case was discharged well. It is hardly necessary to state that good nourishment, iron, and quinine were ordered. After using the biniodide no odor was perceptible in the discharges.

Three Cases of Carbuncle.

Case 1.—April 23, 1887, I was asked to see Mrs. P., æt. 72, and found her suffering with a carbuncle on the back of the neck, six inches long and four inches wide. It was riddled with a number of suppurating points; on the previous day the patient had been given up by her medical attendant as incurable. On Sunday, April 24, 1887, after the patient had been etherized, the wound, instruments, and sponges were made antiseptic by being washed with a 1 to 4,000 solution of the biniodide, after which a crucial incision was made and all the hardened tissue dissected out, down to healthy tissue, thoroughly washed out with the biniodide, and a flaxseed meal and charcoal poultice applied; the sore to be well washed three times a day with the biniodide, when a fresh poultice was applied. Internal treatment, quinine, and full diet. In

twenty days the patient was discharged well. The disagreeable odor in this case was not entirely dissipated, but was held under control.

Case 2.—Mr. B., coal merchant, aged 40. Carbuncle in right shoulder, size of an egg, hard, indurated, extremely painful to the touch, and a point of suppuration at the centre; the case was seen April 7, 1888. The next day, after the patient had been etherized, I made a deep, crucial incision, and dissected out all the hard, indurated tissue; the same treatment was used as in Case 1. No odor connected with the discharges. Patient discharged, cured, in two weeks.

On October 20, 1888, I was again asked to see the above patient. I found him suffering from an attack of herpes of the back of the neck, which was, in a few days, followed by a number of abscesses, two of them resembling small carbuncles. A charcoal poultice was applied, and in three days all the abscesses were opened, but during the following week there seemed to be no change for the better. I then ordered a piece of linen to be saturated with a 1 to 4,000 solution of the biniodide and applied to the surface, and over this a flaxseed-charcoal poultice; within 48 hours the angry appearance of the abscesses and skin abated, and in four to five days more all inflammation had disappeared, when the patient was discharged.

Case 3.—J. E., aged 69, was taken sick about three weeks previous to my seeing him. It first commenced with a painful tumor on the neck. When I saw the case (July 19, 1888), the entire surface from the superior curved line of the occipital bone down to the seventh cervical vertebra and from ear to ear was one immense, suppurating surface, covered with a thick, yellowish green membrane. The discharges were highly offensive. Pulse quick and compressible; slightly delirious; tongue covered with a thick, black, highly offensive membrane. Ordered a piece of linen to be saturated with a 1 to 4,000 solution of the biniodide and applied over the surface, and over this a charcoal-flaxseed poultice every three hours. The odor was held in abeyance. This treatment was continued for about ten days, when the surface became clear of all adventitious membrane. Poultice was continued; carbolic acid was ordered in place of the biniodide. Patient discharged, cured, September 20, 1888.

Dr. S. Solis-Cohen saw the case for me in August, and we concurred in one prognosis, which was death; but we were more than agreeably surprised.

BINIODIDE OF MERCURY WOOL, AS AN APPLICATION OVER THE CHEST IN PULMONARY TROUBLE.

When, in the winter of 1886, I first ordered the chest of a child suffering with catarrhal pneumonia to be enveloped in a layer of the biniodide of mercury wool, it was simply to overcome the dis-

agreeable matting of the cotton. The child, previously to its use, was very restless, and seemed to suffer pain. On the following visit I found that the little patient had had its first quiet sleep since the commencement of its sickness; since then I have almost entirely discarded the use of cotton. The results in a number of cases lead me to believe that there must be something more than the warmth of the wool. Can it be that the heat of the body disengages the biniodide, and as the consequent result, the patient is constantly surrounded by an antiseptic atmosphere?

In a case operated upon for cancerous constriction of the bowel, by Dr. Charles B. Penrose, the patient, about the fourth week, was seized with a sharp pain in the right side below the nipple. Counter-irritants did not relieve her. On auscultation, crepitant râles were easily detected in the lower right portion of the lung, under the point where the pain was complained of. The side was enveloped in biniodide wool, and within twelve hours the pain had entirely disappeared. In the neuralgic pains always present in a case of phthisis I have found the wool to invariably diminish, if not entirely dissipate the pains, and the expectoration seems easier and in smaller quantities.

My attention was called to the following by my office pupil, J. N. England: "Biniodide of Mercury Pulverization for Tuberculosis" (*American Journal of Pharmacy*, October, 1888). Miquel and Rueff's formula is given by the *Arch. de Phar.*, September 5, 1888, as follows: Biniodide of mercury and iodide of potassium, of each 1 gram; distilled water, 1,000 grams. The solution is stable. At the beginning 10 c.cm. are sprayed once daily, to be increased to 25 c.cm. twice daily. The larger portion of the liquid should be inspired. It reaches the lungs, says the author, but salivation does not follow, even after months of treatment. The sputa changes in character and diminishes in quantity; the number of microbes is lessened, but these organisms rarely disappear completely. The cough increases at first, and afterward subsides.

If my theory of the disengagement, by heat, of the biniodide from the wool be correct, its action will readily be explained by the above experiments of Miquel and Rueff.

DISINFECTANT IN THE ALVINE DISCHARGES OF TYPHOID FEVER.

For the past two years I have used the pellets of the biniodide dissolved in the alvine discharges of typhoid fever, and the results have always been satisfactory.

In the spring of 1886 I treated an extremely bad case of typhoid fever. The patient was broken down from dissipation, having had, about two weeks prior to his illness, an attack of delirium tremens. The alvine discharges numbered from twenty to thirty a day, and were highly offensive;

chloride of lime and different forms of chloride and sulphate of iron were used without any diminution of the sickening odor. I then ordered two (1 to 4,000) pellets of the biniodide of mercury to be dissolved in $\frac{1}{2}$ pint of water and placed in the bed-pan, to be renewed every time the pan had been used by the patient. The odor was completely dissipated, and kept so.

In another case the bichloride of mercury pellets were used without success; the biniodide pellets gave the desired result. In a case of labor which, at the end of the lying-in, terminated in an attack of typhoid fever, the nurse used the biniodide pellets on her own account in the bed-pan; there was no disagreeable odor throughout the course of the disease.

The description of the action of new medicinal preparations or new properties to an old medicine necessitates tedious histories of cases; this must be my excuse for dragging through such dry details.

It is not my intention to present to you the biniodide of mercury as the one and only infallible antiseptic; I simply present my results, and have tried to give impartial histories, without exaggeration, simply as they have occurred. But the action and results of the biniodide of mercury fully strengthen my belief in its stronger antiseptic value and non-irritating properties over the bichloride.

221 South Seventeenth St.

DR. FRANK WOODBURY: Since Dr. Bernardy read his previous communication on the use of this agent in obstetrics, I have resorted to it in several cases where symptoms of septicaemia appeared, and where the lochia were offensive. In one case of placenta praevia, where there were offensive discharges, and there was danger of premature labor, I found that the use of this agent in the strength of 1:4,000, corrected the fetor, and the patient escaped premature labor. I subsequently lost sight of her, but I suppose that delivery has since taken place.

I have two criticisms to make in regard to these so-called pellets of biniodide of mercury.

In the first place, they are not pellets, and, in the second place, they do not contain the biniodide of mercury. They are really troches, and their appearance is so inviting that they might be taken by children, or persons not familiar with their dangerous properties, as confectionery. I think that if they were really pellets, or if they were formed in the shape of bacilli, divided into ten portions, so that by breaking off one portion the proper amount of the agent would be secured, the danger would be lessened.

In reference to the second criticism. The biniodide of mercury is not soluble in water. It is soluble in an excess of bichloride of mercury, or in an excess of the iodide of potassium. The

preparation is really and iodo-hydrargyrate of potassium. This is really Neisser's reagent, which has been used as an excessively sensitive agent for the detection of alkaloids, and for the recognition of ammonia and compound ammonias.

I have one thought to offer, which seems suggestive: The value of Neisser's reagent consists in its power to precipitate alkaloids, and to decompose compound ammonias. Now in these cases of bacilli found in offensive lochia and suppurating cavities, the bacilli are probably accompanied by the products of their growth and multiplication. These resemble ptomaines, and are, properly called leucomaines. Philips, of Edinburgh, found that by injecting into animals a watery extract obtained from the sputa of consumptives, and from other tubercular products, he produced the ordinary symptoms of phthisis, fever, emaciation, loss of appetite, and strength, and progressive decline of the powers of life, and finally death. Now, it is probable that these substances, which are alkaloidal in character, are precipitated by Neisser's reagent.

We cannot at this time enter into the question why certain agents are antiseptic and others are not, or why one should be more antiseptic than another. This is a matter of experiment. We do know, however, that Neisser's reagent has for a long time been used in the laboratory for the precipitation of alkaloids, and this fact interested me in this connection as possibly offering an explanation of the effect of this agent in the treatment of suppurating wounds and of offensive lochia.

DR. E. P. BERNARDY: From the start I objected to the shape of the pellets, thinking that they looked too much like candy, and I think that there will soon be a change, so that this danger will be avoided. The pellets of bichloride look very much like chlorate of potassium lozenges, with the exception that the word "poison" is stamped on them.

In regard to this being a double salt. This was the first thing that struck my attention. When I first used this preparation in 1884, I dissolved the biniodide in alcohol. This was found to be inconvenient, and through the kindness of Mr. Hayes, who allowed me the use of his laboratory, his assistant and I worked up this subject. We added iodide of potassium, and then found that the slightest moisture imparted to one pellet was enough to destroy the entire bottleful. We then decided to add the muriate of ammonium, which prevents this chemical reaction until the pellet is thrown into water. The pellet goes in as the biniodide of mercury, and the iodide dissolves it, but before the change takes place it has been used upon the patient.

In regard to my use of this preparation. I have studied it faithfully, and have tried to look upon the cases in an unbiassed way, and to give

a fair history of them. I have sometimes first used the bichloride, and it has not fulfilled the intention as the biniodide has done.

DR. JOSEPH PRICE presented an

EXCEPTIONALLY LARGE OVARIAN ABSCESS.

A few years ago this specimen would perhaps have been considered unique. Only a short time ago abscess of the ovary and very large pus tubes were looked on with considerable doubt. This was particularly true of abscess of the ovary. Some operators now could, perhaps, put on record more cases of ovarian abscess than could be found in all the old records. This was an enormous abscess of the ovary, probably as large as a child's head, and filled the pelvis completely. The condition of affairs was such that would a few years ago have been described as a pelvis filled with mortar, and where we were satisfied that there was simply rigidity of the vaginal vault.

I saw the patient from whom this was removed for the first time last evening. The diagnosis made by the physician was pelvic abscess or a large collection of pus in the left ovary or tube. There was but little doubt in my mind as to the correctness of the diagnosis. The pulse was 140, the temperature 103°. I decided to operate this morning. It would have been better to have operated last night if I had been prepared. The abscess extended above the pelvic inlet. There were adhesions to all the viscera, to the omentum, and to the small and large bowel from the vermiform appendix to the sigmoid flexure.

I present this simply as a specimen of exceptionally large ovarian abscess. This is the second case that I have had within a few days. The first one was not quite so large. The tube in this case was large and tortuous, and had a sausage like feel.

There is one point of interest, and that is, with reference to the character of the fluid that we sometimes find in the pelvis—for instance, in the tubes. If fluid presenting the same characters were emptied from any other portion of the body, as from the brain, axilla, or popliteal space, nothing would be said about the character of the fluid; it would be regarded as pus.

Massachusetts Medical Society,
Suffolk District.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY
AND HYGIENE

ALBERT N. BLODGETT, M.D., SECRETARY.

Stated Meeting December 12, 1888.

Dr. John A. Jeffries presented a short article

entitled *A Good Bread for Diabetics, containing Less than Five per cent. of Starch.*

DR. E. W. CUSHING read a paper on

THE PATHOLOGY AND DIAGNOSIS OF SO-CALLED
PELVIC CELLULITIS, WITH SPECIMENS OF
PYOSALPINX.

(See page 551.)

DR. SINCLAIR: I do not belong to the surgical section of those who treat disease of this kind. I have never operated, and consequently can say nothing at all in that direction. I have more or less acquaintance with the medical aspect of so-called pelvic cellulitis or peritonitis from the time when I was a student of Dr. Simpson, of Edinburgh, who first opened my eyes to this disorder, and I became deeply interested in it from the first. I think I was the first to describe a case of pelvic cellulitis as such in this city or State. The discussion on that occasion was very interesting. The late Dr. Jackson rather doubted the possibility of there being a sufficient amount of cellular tissue about the junction of the neck and body of the womb with the broad ligament to have allowed such an amount of infiltration as was described in that case. Suffice it to say that we regarded it as abscess of the broad ligament. It was within ten days after confinement and followed within about three weeks by a discharge of pus through the rectum. I think it was 28 years ago. Since that time I have studied it as far as I could both from touch and observation, but I have never had an opportunity of seeing the post-mortem examination of such a case except in one instance. Probably twenty cases or more came under my observation as physician of the City Hospital, but this one showed most clearly what had already been written and published by Bernutz in his famous work on pelvic peritonitis and uterine diseases. That case was one of tubercular disease of the fallopian tube, and there were also, I think, some tubercles deposited in the interior of the uterus. At that time I became a convert to the Bernutz and Goupil theory, which was entirely contrary to the one received from Prof. Simpson. It seemed a revelation—like being born again—to accept the theory that this condition of things was intra-peritoneal.

In the Boston City Hospital Reports, vol. i, there is a record of some twenty-one cases of pelvic cellulitis, or "peri-uterine inflammation," inasmuch as I think that term would cover the ground in these obscure cases better than "pelvic cellulitis." The history and the termination would conform much to those cases read by Prof. Rosenwasser. I have no doubt that the conclusion now reached by gentlemen at home and abroad—surgeons and laparotomists, that the best treatment of a large number of these cases has been discovered in the removal of the diseased organs, which are generally the ovary or fallopian

tubes—is the correct one. There are certain cases, however, of true *pelvic cellulitis*, but those generally follow confinement and are septic in their nature.

We have a mild form of pelvic peritonitis frequently met with in girls—recurrences of sharp pain; they are “laid up” for a day or two, and these recur and keep recurring, but very little attention is paid to them; still they may mean a great deal.

The subject is intensely broad. I do not know of another in the whole domain of gynecology that is wider and more interesting; and, as I said in an introductory note in my paper in the Hospital Reports, I believe that 50 per cent. of the disorders of women which we come in contact with are due to some kind of peritonitis, some localized pelvic peritonic trouble. I know that at the time I was laughed at for such an assertion, but I think, instead of 50 per cent., I should set it higher to-day.

DR. S. C. WHITTIER, President of the New Hampshire State Medical Society, said: I have been very greatly pleased with Dr. Cushing's paper and the explanation of the cases that he has given us. But one thing which I think should impress our minds more than perhaps almost any other, is the getting away from, or losing sight of, the idea of pelvic cellulitis. I have come pretty thoroughly to the belief that we really get salpingitis instead; and I now should never examine a typical case of what we call “pelvic cellulitis” without expecting to find salpingitis, and I don't think I should probably be mistaken.

I have had quite an extensive opportunity, under the guidance of Dr. Cushing, of examining almost all of the patients from whom these specimens were removed, and have seen a great many of his operations, and I certainly have been very highly edified and instructed.

DR. JOHN HOMANS: I am much interested in this very large display of specimens of diseased tubes; it brings the fact to the front again that we owe this to Mr. Tait that he first called our attention to this condition of things.

A few weeks ago I had a case much like some of these. The woman had been for seven years an invalid. She was the wife of a railroad engineer unable to employ a servant. She was not able to do much, and had been a good many months in the hospitals. Life was not a burden to her, but still hardly worth living without being able to do anything. On examination, I found in the left iliac region a bunch about as large as a pear, and at the operation I had to go through the mesentery to make an opening into the sac, which I finally, after considerable difficulty, removed. It was the left ovary and tube. She had a drainage-tube inserted, and did very well. The other day, several months after the operation, she called to see me. She was able to work and enjoy herself.

It seems to me that the treatment by laparotomy is the right one. The disease has been going on for some time in many cases, and it is pretty hard to keep a person waiting who is unable to do anything.

Another case I operated on with considerable hesitation, because it was my first operation. It was one of those abscesses connected with the rectum, and I feared I should have a fecal fistula. The uterus was displaced to the right and fixed, and when the abdomen was opened I found a tumor bulging out on the left side beneath the broad ligament, beneath the peritoneum, and with the intestines above it. I aspirated, enlarged the opening, putting in a glass drainage-tube. The woman was better for the time being, but whether it was a permanent cure I do not know. No fecal fistula followed.

Of course all these improvements come from the enlarged practice in ovariectomy. As the operation was introduced by Sir Spencer Wells, and the familiarity of the abdomen obtained by ovariectomists, gradually surgeons became more confident, until a person of Mr. Tait's temperament and courage and decision came along and discovered this condition of the tubes and ovaries.

I think Dr. Cushing is to be congratulated on the results of his efforts; it is a remarkable series of cases and a remarkable showing.

DR. R. H. FITZ: The question that first occurs to me is this: what happens to these cases if not operated upon? Until the removal of acutely diseased tubes the patient was let alone and went under medical treatment; that has already been referred to. When the first of these tubes was brought to me it was a surprise to me that in making post-mortem examinations it was a rare thing for any such condition to be seen; the inference being that if no operation was performed the fluid was gradually absorbed, the pus became absorbed, the tubes thickened, and one had in the person who got beyond the climacteric simply adhesions and thickened tubes. The amount of suffering which these women may have undergone while this process was being brought about was something that I had no idea of at the time; and it seems to me this is the natural history of this class of cases; if the attacks are not so violent as to indicate a spreading peritonitis and demand immediate operation for the relief of that condition, they will generally, the majority of them, dry up and adherent masses will remain, which evidently will give rise to very little disturbance. But it is very evident from the experience of Dr. Cushing, and familiar to other operators, that a great deal of suffering does arise until that thing in the history of the process is brought about; and that the results of these operations are very striking in relieving, as far as the present evidence goes, these serious disturbances.

With regard to the more immediate subject before us—the relation between these pelvic abscesses and tubal inflammation and cellulitis, so called—there is no question that a pelvic cellulitis does occur, and that it results in the formation of pus, but that it gives rise to any considerable tumors limited to the subperitoneal connective tissue seems to me not very likely. The course of pelvic inflammation is either forwards or backwards, and one has a long suppurating track insisted of sharply defined circumscribed tumors that are represented by the tubal inflammations, and also by the cases of circumscribed peritonitis, which are so generally of tubal origin.

I quite agree with Dr. Cushing that the great majority of these cases are not cases of abscess in the pelvic connective tissue, but are cases either of dilated inflamed tubes or of circumscribed peritonitis.

DR. J. P. REYNOLDS: That is a point which I wish to bring up a little. I don't differ perhaps at all from the statement of the general fact, that a vast number of cases which have been considered to be the result of inflammatory process in the peritoneum, are really cases of these inflamed organs, or of the tube, containing confined serum or pus. To that statement no criticism can be made; but I should not want to believe that anybody has seriously asserted that such collections of pus in occluded tubes were the result of inflamed areolar tissue. Septic inflammation in the lying-in-period, for instance, ordinarily follows the track of the subareolar tissue, that is, where the investing membrane lies loosely attached to the uterus, but in the two lateral borders is a frequent seat of such inflammatory processes, less frequently on the anterior and posterior surfaces, because there the investing peritoneal membrane is extremely closely attached to the uterus. It is an old matter of anatomical statement that the areolar tissue extends over the peritoneum, over all the viscera, and inflammatory processes occurring in it are only very exceptionally limited and converted into circumscribed disease; but that ordinarily all the various degrees of inflammation, sometimes extending over a very large portion of the abdominal surface occur, seems to me to be a fact not at all conflicting with the statement that a great many cases have been mistaken for inflammation of that tissue, and perhaps involving the peritoneum over it, when really they were inflammations, as I understand the writer of the paper to urge, of the subjacent organs and of their interior lining, resulting in the formation of masses of liquid. I don't say that it is necessary to imagine that old pathologists were so much in error when they stated that inflammation inside the Fallopian tube was the result of inflammation of the areolar tissue over it; but that there is such tissue capable of doing vast mischief, and does constantly in

the lying-in period, seems to me to be a fact we must still admit. I don't think that it conflicts at all with the statement which underlies the history of these cases, that in the great majority of cases it is an internal inflammation occluding the tubes and resulting in hydrosalpinx or pyosalpinx.

DR. F. L. BURT: In many cases belonging to this class the diagnosis is of considerable importance, although in some cases it may not be really so necessary, because if we are certain that an operation must be performed, we are equally certain of being able to clear up the whole matter at that time. As a point by way of an aid to diagnosis, I would say a few words which might be of interest in regard to the use of electricity in these cases. The benefit to be derived from this agent will depend upon whether there is or is not pus present as a result of the pelvic inflammation; that is, whether an abscess or not.

To illustrate this I will briefly relate the facts concerning two typical cases. A woman of 45 years desired to enter the hospital, but I could not admit her, as there seemed to be no operation indicated, yet she was sadly in need of treatment, as she was a complete wreck. Examination showed the results of an old pelvic inflammation, and the outline of the uterus could not be made out at all. The condition was one which would most usually be diagnosed as fibroid, but there was no such tumor. I offered to treat the case at my office as a free patient. One application caused such an amount of absorption that I could easily outline the uterus after it, and with six applications there was such relief that she was able to resume work. The second case was diagnosed as fibroid which had considerable pain and flowing associated. The removal of ovaries and tubes was considered. As a preliminary treatment I applied galvanism, positive intra-uterine. The result was to increase the pain and not to stop the hæmorrhage in the least.

Previous experience led me to doubt the diagnosis, and the operation revealed a double pyosalpinx. A private case of which I show the specimen well illustrates this latter type. A lady of 50 years had suffered during the past six years all the tortures resulting from a pelvic inflammation. There was treatment at the beginning for pelvic inflammation, and what was called a cure resulted. Quite recently she was told that she suffered simply from nervousness. She was referred to me by Dr. Manuel for treatment. I found it to be a typical case of pelvic inflammation, and the pelvic organs were joined in one solid mass, but the existence of pus was uncertain.

I began with galvanism, but it did not help in any way, and the pains grew worse. The reason you will see, for a little later I did a laparotomy, and the result was the removal of the double pus tubes which I show you. The case has recovered

perfectly. Another specimen which I will present is that of tubes and ovaries from a lady aged 38, who had a fibroid about the size of a twelve weeks' pregnancy. She had flowed constantly for three weeks, and was much reduced. Some might consider this a suitable case for electrical treatment, but I did not so judge it, from the fact that there was evident disease of the tubes, and the ovaries were displaced, adherent, and very tender. She had had supporters used for a considerable time, only to aggravate the trouble. I admitted her to my private hospital, and the following day removed the tubes and ovaries. There was double hydrosalpinx, both ovaries were enlarged, cystic, displaced downwards and backwards and adherent.

Their removal was a necessity both to relieve the pain and to cause the uterus to diminish in size. The recovery from the operation was extremely rapid, and she was up in fourteen days.

In regard to the cases whose specimens have been exhibited this evening, I would say that I have had personal knowledge of them all. It is a class of cases hard to diagnose and difficult to treat, and they usually have been through all kinds of treatment, without cure, sometimes without relief, it may be for years, before they come to the surgeon. The operation is not a necessity for life, but it is for a comfortable life, as all patients suffering in this way are invalided considerable of the time, and life is a constant burden to them. Because of this I would consider the operation as clearly indicated, and the results of this series show that everything expected has been realized.

DR. M. ROSENWASSER said: While it is intended to limit the scope of my remarks to reflections on chronic pelvic inflammatory troubles, intimately connected with the subject under discussion, I beg leave to digress for a moment to question the advisability of saving the right appendages in the case of suspected gonorrhoeal salpingitis. The right tube and ovary were bound down by adhesions, requiring considerable force to separate and unfold them; they appeared otherwise healthy. The object in dropping them into the pelvis was to afford the young wife the only remaining chance for a future pregnancy. One would *a priori* expect the bruised and wilted tube, with its raw, thickened walls, to be again enveloped in exuded lymph, its abdominal end occluded and the whole organ glued down to its old or some other neighbor in the pelvis. In due time this tube, so disqualified for performing the function sentimentally reserved for it, will give rise to a series of symptoms of renewed disease which will render its removal as necessary as was that of its fellow. My ominous prediction is based on a paper by Lawson Tait in the May number of the *Amer. Journal of Obstetrics* for 1887, entitled "On the Results of Unilateral Removal of the Uterine

Appendages." In twenty-six unilateral appendages so saved, there was a return of the disease in more than half of the cases; only three subsequently became pregnant. These unpromising results followed, although the appendages remaining had seemed perfectly normal.

DR. CUSHING: I have very little to say to close the discussion. I should like to bring out again the fact that in presenting all these cases and all coming in at once, I do not desire to imply that all such cases are to be rushed into this operation. These are old and neglected cases, most of them from out-of-the-way places where they couldn't get treatment. I had a case from Dr. Adams, of Framingham—pelvis full and hard. I said: "The woman has a home, can hire a girl; better give emollient applications, and wait."

In regard to getting fæcal fistula: of course there is some danger of that. In one of these cases pus was discharged from the rectum. On examining with the finger during the operation I found what I presumed to be adhesions and hardened tissue around the fæcal fistula. I did not disturb it, and she had no trouble from it.

In regard to the matter of puerperal inflammatory affections, I think the profession is going through the same process of education at the hands of Mr. Tait as they did in the case of areolar tissue at the hands of Ruysch.

I think in those cases in which Mr. Tait had the opportunity of operating, within a few days he found the tube enlarged, diseased, and evidence that the septic infection had not got into the lymphatics and run up in that way, as is generally supposed, inflaming the areolar tissue, but that there was septic endometritis; the tubes were enlarged, not occluded; pus runs out and sets the peritoneum on fire—that is the way the case spreads. I saw M. Price operate in a case after abortion. The woman had puerperal fever. The tube was found as big as my wrist, big as a Bologna sausage. Out of that came this nasty foul pus, of which there were pockets in the pelvis. The case was perfectly clear, nothing about the areolar tissue. Pockets extended up to the kidneys. It was a neglected case.

From the results of such operations, I think the profession will go through the same course in regard to puerperal cases as in regard to non-puerperal cases. Where there is an acute case of puerperal fever somebody will take out the diseased tube, if necessary the whole diseased uterus, and in that way save the woman, because the whole uterus may be a sloughing, diphtheritic bag of foul pus. That could be rinsed out from below, but nobody can rinse the tubes out. I think the operation for puerperal fever is going to be to remove the tubes and sometimes the uterus with it, drain and wash out the pelvis, and a good many women will be saved.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR SPECIAL CORRESPONDENT.)

Sir Joseph Lister: His Operative Work—Abdominal Surgery at the Samaritan Free Hospital for Women—Operative Methods—The Museum in Lincoln's-Inn-Fields.

The hospitals and clinics of the metropolis are so numerous, and the number and variety of patients and diseases so great, that one must of necessity make a selection. Fortunately the days and hours for visits and operations are published, and the visitor need have no difficulty in arranging his visits and thereby utilize all his time. My first visit to Kings' College Hospital was on Friday, the 22d of February, at 2 o'clock, the day and hour of Sir Joseph Lister's clinical lecture. Of course I had an especial desire to see the operative work and to know something of the *personnel* of the man who of all now living has most advanced the science and art of surgery. I remarked as much to Sir Joseph as we entered the operating theatre, saying that I deemed myself fortunate in seeing antiseptic surgery done by the Master, to which he replied with acknowledgement, saying, "the Master is growing old, Doctor, and must ere long leave to others the continuation of his work." The case for operation on this occasion furnished an excellent opportunity to witness the details of his method and the application of the surgical principles bearing his name, it being a case of schirrus of the breast. The operation consisted of complete excision of the right mammary gland and also of the axillary glands adjoining. The spray has long since been omitted from the antiseptic technique. The integument was first thoroughly cleansed and sterilized with a solution of bichloride of mercury, 1 to 500. Towels wrung from a solution of carbolic acid, 1 to 20, were then placed around the site of operation. The instruments and sponges were placed in the solution of carbolic acid, and the same was used for the hands of the operator and his assistant. By a triangular incision the breast was opened and the entire gland containing the tumor removed. The incision was continued into the axilla, and the axillary glands and fascia cleanly removed, the operator relying most upon his fingers and the handle of the scalpel in enucleation. Bleeding vessels were seized with pressure-forceps, and catgut ligatures applied and cut short where required to secure them. Rubber drainage-tubes were placed, the exposed surfaces irrigated with the sublimate solution, and the irrigation continued while the dressing was completed. The latter consisted of the application of silk sutures bringing the flaps together, antiseptic gauze to the wound, all covered with several

layers of light antiseptic gauze, and a bandage retaining all and fixing the arm to the side. As a surgeon Sir Joseph is prompt, deliberate, skillful and self-reliant. Indeed he is, in a word, a thorough-going surgeon. There were two points impressed more particularly upon my mind as I watched the several steps of the operation. The first was the dexterity with which Sir Joseph utilizes the drainage-tube, and what an important feature it is in his technique. In this instance he used three, placed so as to thoroughly drain the extensive surfaces of all fluids. The second point noted was the care bestowed upon preventing admission of air to the wound after uniting the flaps and making the final sublimate irrigation. His care and solicitude regarding this last point were marked, and show that he is firm in his conviction that the air is the medium of microbic infection. As you know, this last premise is the battleground contested so keenly by those who do not adopt in its entirety the Listerian doctrine. The so-called gospel of surgical cleanliness insists upon asepsis as effected by hot water to instruments, hands, etc., but does not regard the air a medium of infection. The fact stands before us, however, that in old hospitals and crowded wards wounds are united without suppuration, joints opened and healed without febrile action under thorough antiseptics. This too with uniformity, in an atmosphere which in the old days carried septic infection in some degree to every wound exposed thereto.

After operating, Sir Joseph Lister kindly took me through his wards where I had the opportunity to see a large number of interesting cases. He removed the dressings from a case of fractured patella in which the joint was opened and fragments wired one week before. The stitches were clipped and removed from a dry, firmly united wound. Two lateral splints secured immobility of the limb, and are retained until union is firm, being removed from time to time for passive motion. In another case the thigh had been amputated, on account of sarcoma, three weeks before, and the temperature chart told the story of continued improvement without febrile action from the date of operation. The case which interested me most in these wards was that of a woman with suppurating hydatid cyst of the liver communicating with the stomach. Three days before Sir Joseph had made an exploratory section, opened, irrigated and drained the sac. The patient now maintained by enema, and presented favorable symptoms. Such interference in an obscure abdominal swelling, associated with grave constitutional symptoms, illustrates genuine conservative surgery, whereas the common practice of giving anodynes in such conditions, called expectant treatment, is anything but conservative. Sir Joseph has the Fergusson and Victoria wards in this excellent hospital, which are always filled with interesting surgical cases of great variety.

Just off Portman Square, at 13 Lower Seymour street, situated immediately on the street, is an unpretentious building which has been the scene of most important events connected with the rise and progress of a great and brilliant department of surgery. A glance is sufficient to assure one that the building was never designed for its present purpose, but that it was a small dwelling-house which has been enlarged and adapted to the demands of its present use. It bears the name of the Samaritan Free Hospital for Women and Children, founded in 1847, with the additional statement that it is supported by voluntary contributions. Entering the reception-room the eye is attracted by a handsome marble bust of Sir Spencer Wells, the eminent consulting surgeon of the hospital. It was here that Sir Spencer conducted through many years with unswerving fidelity and persistence, in the face of fierce opposition and denunciation, those labors in abdominal surgery which laid the foundation for the brilliant achievements of the present age. It must be remembered that after McDowell and Nathan Smith had passed away, ovariectomy lapsed into disrepute, until Wells, in England, and the Atlees, in America, resumed the work and placed the operation upon a firm footing. Sir Spencer has retired from active work at the hospital, and the work is ably continued by Bantock, Thornton, Meredith and others. The first operation I witnessed in the hospital was on February 26, and was by Dr. Bantock. Before being admitted to the operating room all visitors are required to sign a printed statement that they have not recently attended any case of acute infectious disease or post-mortem examination. On entering the room the patient was anesthetized and the operator, assistant and nurse in their respective positions. The hair was shaved from the pubes, and a rubber cloth laid over the patient's body, with an opening over the abdomen. The instruments were placed in trays and covered with hot water. No antiseptic solutions of any kind are employed by Bantock. An incision was quickly made in the median line about 3 inches in length. Before opening the peritoneum all bleeding points were seized with pressure forceps. The peritoneum was seized and nicked, and divided with scissors. The operator then introduced two fingers and thoroughly explored the pelvis. The tumor was an uterine fibroid and was found to have extensive attachments to the sides of the pelvis and pelvic viscera. It was decided to be impracticable to remove it, and the incision was at once closed. Silk-worm gut sutures were introduced with the Hagedorn needle, and the incision neatly closed. A piece of gauze was applied along the wound, a pad of same material superimposed and a broad bandage placed firmly over all.

On March 3, I witnessed a second abdominal section by Bantock. On opening the abdomen

the tumor was found to be a solid tumor of the broad ligament. The peritoneal covering of the tumor was incised, the growth turned out, and a point of firm attachment secured with a single ligature. Considerable venous oozing persisted from the site of the tumor. After packing with sponges for a time, a glass drainage-tube was placed in and the incision closed. The operation was done quite deliberately, great care bestowed upon the toilette of the peritoneum and dressing, and no attempt to curtail time by quick work. Silk-worm gut sutures were used to close the incision. Bantock is most attentive to details, exceedingly neat in all his work and deliberate in dealing with complications. His results are unsurpassed.

On March 6, I saw Mr. Knowsley Thornton do an ovariectomy. Although working in the same hospital, his technique is altogether different from that adopted by Bantock. The patient having been etherized is covered with a large rubber sheet, with a opening over the central part of the abdomen. The instruments, ligatures and sponges are placed in a solution of carbolic acid and the spray (carbolic acid 1 to 24) directed upon the field of operation throughout. An incision about 3 inches long was made and the cyst was entered through dense adhesions. The chocolate-colored contents of the cyst contained numerous, large, soft degenerated clots, seeing which the operator expressed his belief that the tumor would be found to have a twisted pedicle. This proved to be correct. The sac was universally adherent, the attachments being old and very firm. The sac was emptied and thoroughly cleansed, and the work of separation begun. This proved a difficult task. After a faithful effort to secure a hold at the line of incision, it was decided to enlarge the incision and attempt separation from the posterior. The sac was inverted as far as possible and carefully divided upon its posterior part down to omentum and intestines and the work of enucleation begun. The attachments to omentum, intestine and Fallopian tube were very firm and separated with great difficulty. The scissors was required frequently and many ligatures applied. Denuded surfaces bled freely and ligature and sponge-packing constantly applied. Proceeding cautiously, the huge sac was finally brought away. The peritoneum was thoroughly cleansed, all oozing surfaces receiving close attention, and after repeated counting of sponges and forceps the drainage-tube (glass) was placed in Douglas' space and the incision closed. The tube was dressed with sponge and rubber, as usual, but closed carefully by a pad and bandage over all, so as to exclude completely access of air. The pad over the incision was fixed by strong adhesive straps, and bandage over all.

This operation required an hour and thirty minutes and was one of the most difficult I have

ever seen. I have encountered in my own work one such cyst with universal firm adhesions, and could appreciate all the more the difficulties of the situation. In my own case I left behind several portions of the sac attached to the intestines; my patient made a good recovery. Mr. Thornton told me after the operation that several times during the operation he doubted his ability to complete the enucleation. I saw this patient yesterday, eight days after the operation, in advanced convalescence. She had an uninterrupted progress toward recovery, which is already assured.

Of the many admirable features of Mr. Thornton's work, one deserves special mention. I allude to his sponge-packing. He leaves no bleeding points to go back to, but secures them as he proceeds. He uses his sponges to great advantage as means of pressure, to absorb exuded fluids, and to protect the peritoneum in every way. He uses silk altogether for ligatures and sutures.

On March 14 I witnessed an ovariectomy by Dr. Bantock in the morning, and a cholecystectomy by Mr. Thornton in the afternoon. Having outlined the methods of each in abdominal work, I will not go into details by way of repetition.

One of the most interesting and instructive places a medical man can visit in London is the Museum of the Royal College of Surgeons in Lincoln's-Inn-Fields. The collection illustrating extra-uterine foetation is especially rich and particularly interesting at this time, when so much attention is being given to the subject. Here also are to be found many specimens from Sir Spencer Wells' extensive experience; one of these from a case of Porro's operation, with nodular fibroid uterus, deserving special mention. One dermoid of the ovary, containing a mass of hair and teeth, is of the Hunterian collection. The collection of uterine and ovarian tumors is very extensive and illustrates many pathological conditions of practical interest. These are all the more instructive by reason of the fact that a history of each in abstract is at hand.

In a few days I go to Bristol to spend a few days with Mr. Greig Smith, and thence to Edinburgh. About April 1 I will go to the Continent, and will write you from Paris or Munich.

L. S. McMURTRY.

March 15, 1889.

BOOK REVIEWS.

INTESTINAL SURGERY. By N. SENN, M.D., PH.D., Attending Surgeon Milwaukee Hospital; Professor of Principles of Surgery and Surgical Pathology, Rush Medical College, Chicago. Chicago: W. T. Keener. 1889.

This is an octavo volume of 269 pages, printed

and bound in fair style, and contains a republication of the author's very valuable contributions to our knowledge of intestinal injuries and their treatment, by experiments and clinical experience. It contains the lengthy paper on The Surgical Treatment of Intestinal Obstructions, read before the Congress of American Physicians and Surgeons, in 1888; An Experimental Contribution to Intestinal Surgery, etc., reprinted from the *Annals of Surgery*; Rectal Insufflation of Hydrogen Gas, an Infallible Test in the Diagnosis of Injury of the Gastro-Intestinal Canal in Penetrating Wounds of the Abdomen, read in the Surgical Section of the American Medical Association, 1888; and the report of two or three cases illustrating the practical application of the hydrogen gas insufflation.

A MANUAL OF INSTRUCTION IN THE PRINCIPLES OF PROMPT AID TO THE INJURED, Designed for Military and Civil Use. By ALVAH N. DOTY, M.D., Major and Surgeon Ninth Regiment N. G., S. N. Y.; Attending Surgeon to Bellevue Hospital Dispensary, New York. New York: D. Appleton & Co. 1889.

This is a small sized volume of 224 pages, published in good style and fully illustrated. The author says in the preface: "The object of this manual is to instruct those who are desirous of knowing what course to pursue in emergencies, in order that sick or injured may be temporarily relieved. Special effort has been made to arrange the matter and introduce such points as will be of use to the ambulance corps connected with the different military organizations." From a cursory examination of the contents of the book we think the author has succeeded well in accomplishing the object just stated.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS. Vol. II, No. 1. Contents: "On Diabetes and its Connection with Heart Disease," by JACQUES MAYER, M.D. "Blenorrhœa of the Sexual Organs and its complications," by ERNEST FINGER, M.D. New York: Wm. Wood & Co. April, 1889.

This number of Wood's Monographs contains the two articles named above. They are well translated and interesting. The first occupies 29 pages, the second 275. The second is a complete monograph upon the subject. The advice in regard to treatment is certainly judicious, but we do not learn that any very great advancement has been made by the author over the results of others.

THE STUDENTS' TEXT-BOOK OF THE PRACTICE OF MEDICINE. By ANZEL MONEY, M.D., Lond. London: H. K. Lewis, 1889.

This small hand-book is very well written and free from errors. It is to be commended as a good

but too brief résumé of the subject. In this country at least it is doubtful if there is any need for such small works, which imperfectly cover the subject of the Practice of Medicine.

AMERICAN RESORTS; WITH NOTES UPON THEIR CLIMATE. By BUSHROD W. JAMES, A.M., M.D. With a Translation from the German by Mr. S. Kaufmann of those Chapters of "Die Klimate der Erde," written by Dr. A. Wollkoff, of St. Petersburg, Russia, that relate to North and South America, and the Islands and Oceans contiguous thereto. Philadelphia: F. A. Davis. 1889.

As indicated by the title, this unique and carefully written book is especially adapted for the perusal of invalids and those who desire to preserve good health in a suitable climate. The author, in the preface says, the longer he is engaged in professional work as a physician, the more he is impressed with the importance of the residence of invalids in a suitable climate as an almost indispensable factor in the treatment, prevention and cure of many forms of disease. He is of the opinion that our own country affords sufficient variety and range of climatic conditions to meet the needs of any case where change of climate is desired. He goes on to say: "If we as people, would more generally seek health in our own sanatoria, and our medical men would encourage their patients so to do, the value of these places of retreat for health would soon be appreciated and their fame become widespread."

The chapter on Medical Climatology is especially interesting to the profession, as is also that on the Benefits and Dangers of Health Resorts.

The book is well printed, and reflects credit on both author and publisher.

MISCELLANY.

THE McLEAN COUNTY MEDICAL SOCIETY met in extra session on April 11, 1889, at the office of Drs. Darrah & Corley. There were present Drs. S. T. Anderson, L. A. Burr, E. K. Crothers, C. J. Corley, A. L. Chapman, A. T. Darrah, N. F. Jordan, Wm. Hill, E. P. C. Holderness, E. Mammen, H. Parkhurst, W. L. Pollock, G. M. Smith, J. B. Taylor, F. J. Welch, J. L. White, S. B. Wright.

Dr. Parkhurst occupied the chair. Dr. Jordan stated the object of the meeting, which was to take some action with regard to the proposed repeal by the State Legislature of Section 11 of the Medical Practice Act. On motion the chair appointed Drs. Hill, White and Darrah to prepare resolutions expressive of the sentiments of the members of the Society with reference to the proposed legislation. The committee reported and the Society adopted unanimously the following:

WHEREAS, A bill has been introduced in our State Legislature by one of the Representatives from this county, to repeal Section 11 of the Medical Practice Act, and

WHEREAS, The impression might be conveyed abroad

that the medical profession of McLean County was in accord with the Representative who has offered the bill. Therefore be it

Resolved, That we, the members of the McLean County Medical Society in extra session convened, this, the 11th day of April, 1889, condemn the action of our Representative in his efforts to repeal said Section 11 of the Medical Practice Act, and further, be it

Resolved, That we heartily endorse the Medical Practice Act as it now stands.

Drs. J. L. White and A. T. Darrah were appointed to visit the Illinois State Legislature in the interest of the Medical Practice Act as it now stands.

C. J. CORLEY, M.D., Secretary.

ADMISSION OF AIR TO ROOMS.—Air should be introduced and removed at those parts of the room where it would not cause a sensible draught. Air flowing against the body at, or even somewhat above the temperature of the air of the room will cause an inconvenient draft, from the fact that, as it removes the moisture of the body, it causes evaporation or a sensation of cold. Air should never, as a rule, be introduced at or close to the floor level. The opening would be liable to be fouled with sweepings and dirt. The air, unless very much above the temperature of the air of the room, would produce a sensation of cold to the feet. It may be regarded as an axiom in ventilating and warming, that the feet should be kept warm and the head cool.

The orifices at which air is admitted should be above the level of the heads of the persons occupying the room. The current of inflowing air should be directed toward the ceiling, and should either be as much subdivided as possible by means of numerous orifices, or be admitted through conical openings with the smaller opening toward the outer air and the larger openings toward the room, by which means the air of the entering current is very rapidly dispersed. Air admitted near the ceiling very soon ceases to exist as a distinct current, and will be found at a very short distance from the inlet to have mingled with the general mass of the air and to have attained the temperature of the room, partly owing to the longer mass of air in the room with which the inflowing current mingles, partly to the action of gravity in cases where the inflowing air is colder than the air in the room. —*Sanitary News*, April 13, 1889.

A NEW CHAIR.—A Chair of Physical Examination for Life Insurance has been created in the University of Vermont. Is there anything in the physical examinations for life insurance that differs so much from the application of physical examinations for diagnostic purposes generally, that a special Chair for its teaching is required?

THE ANNUAL MEETING of the Association of Acting Assistant Surgeons of the U. S. Army will be held in the Casino at Newport, R. I., Monday, June 24, 1889, at 8 P.M. Members of the Association are cordially invited to read, or present papers concerning the history and the welfare of the corps. Members who intend to be present are requested to notify the Recorder at the earliest possible date. Although few Acting Assistant Surgeons can be present at the meeting, the Association will discuss the best methods to aid in improving the status of those who are now serving, and will do everything in its power for their welfare. The Secretary, or Recorder, is W. Thornton Parker, M.D., 322 Benefit St., Providence, R. I.

MEDICAL ASSOCIATION OF THE DISTRICT OF COLUMBIA.—At the recent regular annual meeting of the Medical Association of the District of Columbia the following officers were elected for the ensuing year: President, Jas. T. Young, M.D.; Vice-Presidents, A. F. A. King, M.D., Swan M. Burnett, M.D.; Secretary, Geo. C. Ober, M.D., Treasurer, Sam'l S. Adams, M.D.; Censors, Drs. H. D.

Fry, C. W. Richardson, L. K. Beatty; Counselors, Drs. T. W. H. Lovejoy, Kleinschmidt, Smith, Acker, Cook, Dunn, McArdle, Prentiss and Johnson.

THE TWENTY-SECOND ANNUAL SESSION of the Medical Society of the State of West Virginia will be held at White Sulphur Springs, W. Va., on July 17, 18 and 19, 1889. The prospects are that this will be a large and interesting meeting. Dr. J. L. Fullerton, Secretary of the Society, Charleston, W. Va., will be glad to give any information desired.

THE MICHIGAN STATE MEDICAL SOCIETY will hold its next annual meeting in Kalamazoo, May 9th and 10th. The Address on Medicine will be given by Dr. H. F. Lyster; the Address on Surgery by Dr. Newman Kiefer; and the Address on Obstetrics and Gynecology by Dr. E. W. Jenks. Complete arrangements are made for the accommodation of members and a full meeting is expected.

PAMPHLETS RECEIVED.

Baker, A. R., M.D., Cleveland, Ohio. *Opening Address Medical Department of the University of Wooster, February, 27, 1889.* Reprint from the Cleveland Medical Gazette.

Judson, A. B., M.D., New York. *The Question of Interfering with the Abscesses of Hip Disease.* Reprint from the New York Medical Journal.

Kipp, Charles J., M.D., Newark, N. J. *A Cause of Double Vascular Exophthalmos. Recovery Under Intermittent Compression of the Right Carotid Artery and the internal use of Iodide of Potassium. Cocaine Conjunctivitis.* Reprint from Transactions of American Ophthalmological Society.

Newman, Henry P., M.D., Chicago. *Alexander's Operation, with Report of Cases.* Reprint from the North American Practitioner.

Roberts, John B., M.D., Philadelphia. *The Science of Successful Surgery.* Reprint from the Journal of the American Medical Association.

Solis-Cohen, J., M.D., Philadelphia. *Common Membranous Sore Throat.* Reprint from the New York Medical Journal.

Vander Veer, A., M.D., Albany, N. Y. *Relation of the Abdominal Surgeon to the Obstetrician and Gynecologist.* Reprint from Gaillard's Medical Journal.

LETTERS RECEIVED.

Dr. H. F. Walter, Gladbrook, Ia.; A. S. Burdick, West Hallock, Ill.; Dr. E. C. Loehr, Noblesville, Ind.; Dr. C. S. Pixley, Elkhart, Ind.; Dr. James M. Jacks, Montreal, Canada; Dr. A. J. Brockett, Cleveland, O.; Dr. J. J. Mulheron, Detroit, Mich.; Dr. Frank Allport, Minneapolis, Minn.; Dr. R. J. Duglison, Philadelphia; Dr. Geo. C. Ober, Washington, D. C.; Good Health Publishing Co., Battle Creek, Mich.; Dr. John S. Coleman, Augusta, Ga.; Dr. A. C. Ames, Hebron, Neb.; Dr. H. C. Pearce, Urbana, O.; Dr. E. C. Traver, Franklin, N. Y.; Mellier Drug Co., St. Louis, Mo.; Dr. R. F. Price, Waynesburgh, O.; Miner & Elbreg, Indianapolis, Ind.; John G. Reed, Cincinnati, O.; Providence Chemical Works, St. Louis, Mo.; Dr. A. L. Hummel, Philadelphia; Lehn & Fink, Eisner & Mendelson, New York; Dr. J. G. Carpenter, Stanford, Ky.; Dr. Samuel N. Nelson, Boston; Dr. C. J. Proken, New York; Dr. H. W. Shove, Woodbury, Conn.; Dr. H. D. Niles, Salt Lake City; Dr. J. H. Thornton, Lansing, Ia.; Dr. F. M. Thomas, Samantha, O.; Dr. J. W. Trabert, Annville, Pa.; Dr. P. P. Nichols, Searsport, Me.; F. A. Field, Rutland, Vt.; Dr. Wm. B. Canfield, Baltimore, Md.; Dr. S. P. Bishop, Delta, O.; Dr. E. J. Tidd, Clark, Pa.; Theodore Metcalf & Co., Boston, Mass.; Soden Mineral Springs Co., New York; Dr. L. S. McMurtry, Paris, France; Dr. H. K. Myers, Chambersburg, Pa.;

Thos. Leeming & Co., New York; Codman & Shurtleff, Boston; Daniel Green & Co., New York; Medical and Surgical Sanitarium, Battle Creek, Mich.; Dr. John H. Clark, Mechanicsburg, O.; Geo. F. Lasher, Philadelphia; W. H. Schieffelin & Co., New York; Dr. A. M. Wilber, West Unity, O.; M. A. Spencer & Co., Cincinnati; Battle & Co., St. Louis; Dr. A. G. Young, Augusta, Me.; John C. Jenkins, Louisville, Ky.; Henry L. Hayes, Washington, D. C.; Galvano-Faradic Mfg. Co., New York; Dr. W. W. Seymour, Troy, N. Y.; J. B. Lippincott Co., Philadelphia; Springer Torsion Balance Co., New York; Dr. J. N. Eldred, Chesaning, Mich.; Maltine Mfg. Co., New York; Farwell & Rhines, Watertown, N. Y.; Dolber-Goodale Co., Boston; Packer Mfg. Co., New York; Chas. Lentz & Sons, Philadelphia; Lambert Pharmacal Co., St. Louis; Dr. J. L. Slaughter, Hot Springs, Ark.; Dr. James P. Marsh, Green Island, N. Y.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from April 6, 1889, to April 12, 1889.

PROMOTIONS.

Charles C. Byrne, Surgeon U. S. Army, promoted Surgeon, with the rank of Lt.-Col., to rank from March 29, 1889.

Curtis E. Munn, promoted from Asst. Surgeon to Surgeon, with the rank of Major, to rank from March 29, 1889.

By direction of the President, Capt. Paul R. Brown, Asst. Surgeon, will report in person to Brig.-Gen. John R. Brooke, President of the Army Retiring Board at Omaha, Neb., for examination by the Board. Par. 9, S. O. 80, A. G. O., Washington, April 6, 1889.

By direction of the Secretary of War, leave of absence for six months is granted Capt. Charles S. Black, Asst. Surgeon, to take effect after the arrival at Ft. Sidney, Neb., of Acting Asst. Surgeon Robert P. Finley. Par. 14, S. O. 78, A. G. O., Washington, April 4, 1889.

By direction of the President, the State of Wisconsin is transferred from the department of the East to the Department of Dakota. G. O. 36, A. G. O., Washington, April 6, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending April 13, 1889.

P. A. Surgeon A. C. Heffenger, found unfit for duty at present, by Retiring Board, but not permanently incapacitated for active service, and granted one year's leave of absence for medical treatment.

P. A. Surgeon W. R. DuBose, detached from the U. S. S. "Constellation" and ordered to the practice ship "Jamestown."

C. H. T. Lowndes, commissioned an Asst. Surgeon in the U. S. Navy March 13, 1889.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending April 13, 1889.

Surgeon John Godfrey, to proceed to Poughkeepsie, N. Y., on special duty. April 10, 1889.

P. A. Surgeon F. W. Mead, to report in person to the Supervising Surgeon-General, April 3, 1889. Detailed as Acting Chief Clerk Marine Hospital Bureau, and attending surgeon, port of Georgetown, D. C. April 10, 1889.

P. A. Surgeon W. A. Wheeler, relieved from duty at Buffalo, N. Y., to assume charge of the Service at Norfolk, Va. April 3, 1889.

P. A. Surgeon S. C. Devan, relieved from duty as Acting Chief Clerk, Marine Hospital Bureau, and attending surgeon; to assume charge of the Service at Buffalo, N. Y. April 3 and 12, 1889.

Asst. Surgeon W. J. Pettus, granted leave of absence for four days. April 6, 1889.

Asst. Surgeon J. B. Stoner, to rejoin station (New York) as soon as practicable. April 11, 1889.

THE

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, APRIL 27, 1889.

No. 17.

ORIGINAL ARTICLES.

POPULAR FALLACIES REGARDING ATHLETES AND ATHLETICS.

BY IRVING ROSSE, M.D.,
OF WASHINGTON, D. C.

As a branch of medicine that has for its object the bringing of man to a greater state of physical perfection, the question of athletics has for the more advanced and liberal minded of our profession the highest interest.

In our parliamentary city where so many persons suffer from the effect of sedentary life, the athletic remedy seems to be the only sensible one, and it is daily becoming more apparent that a growing demand for athletics exists among the bright young men of the civil service who are fast replacing the sick, the infirm, and the political paretics that formerly filled the government departments. It is, therefore, with much gratification that we can point to the organizations of the Columbia Athletic Club of 450 members, and note the very favorable auspices under which it takes departure, owing to the liberality of a wealthy citizen, Mr. John McLean, formerly of Cincinnati.

The War Department, too, shows increased concern in the somatic efficiency of the material composing the Army. Dr. Greenleaf, of the Surgeon-General's office, has lately interested himself in the study of Dr. Sargent's anthropometric system with a view to its general introduction into the service. Any measure that will raise the physical standard in our little army is, of course, worthy of the highest praise. Even West Point men are physically far below the popular conception. A large proportion of them cannot swim, and generally speaking, the educational means of elevating the physical powers are not at the Military Academy what they should be. Acute indigestion and affections of the alimentary canal are more common than is generally supposed among the cadets, and inability to support a little fatigue and atmospheric vicissitude, such as that encountered at the inauguration of General Grant in March, 1873, does not give a very favorable exhibit, judging from the sick reports of that month, which shows a total of

195, while a larger number of artillerymen, nearly all of whom got wet the night before the inauguration, shows but thirty-three sick. The proportion of sick among the naval cadets, also present, was notably less—a circumstance that speaks well for the reorganization of Admiral Porter, who, by the way, has correct and enthusiastic notions in regard to physical culture, which have been introduced at the Academy. To any one witnessing the parade on the forementioned occasion the fresh, ruddy appearance of the midshipmen was in striking contrast to that of the cadets. A few years since at the Artillery school at Fort Monroe, of fifty-three officers, mostly young graduates, only eight could swim, and but three well; three more knew a little about boxing, and two could put up the dumb bell of sixty pounds—facts that go to show that military drill alone is a poor means to attain the athletic habit of body so becoming to a soldier.

Aside from military considerations, it may be laid down as an axiom, that in order to have a strong nation the palestric element must enter. Many popular fallacies concerning athletes and athletics still prevail to a great extent, not only in the general community, but among medical men, and this mainly for the reason that heretofore most of the published opinions relatively thereto have emanated either from athletes who knew nothing of medicine, or from physicians who were not athletes. In these days when errors are being dispelled and the mists of prehistoric times are finally rolling away, a thoughtful man is often astonished at the persistency of many popular fallacies, which, as a matter of fact, are no better than the groundless superstitions about Friday, thirteen at table, or the alleged coincidence of the red-headed girl and the grey horse—all of which exemplifications may be classed in the same category of sophistical reasoning with much that has been written and accepted respecting athletics.

Physicians are often accused of their deficiencies in the science of logic, and in many instances very justly so, but I am not at all prepared to believe that as a class they are any more deficient in this respect than other people. Without attempting to take up their cause, I will admit that the records of medical literature are

filled with rubbish, and that medicine continues to deserve the designation of an art rather than that of a science, mainly for the reason that some medical men will rush into print with no suggestion as to the insufficiency of the evidence adduced in order to establish a new truth. This gives rise to that common and most fatal of all errors, a post-hoc conclusion. If I were writing a book on errors in reasoning, and wanted to exemplify false ratiocination or deduction, I do not know of a more prolific source than that of sciolistic medicine, from which I might borrow pathological illustrations so to speak.

I might also quote various authors who, in regard to physical exercises, have carried their invectives so far as to have substituted prejudice for reason, and have generalized from insufficient observation.

Mr. Wilkie Collins' attempt to bring athletics into disrepute in "Man and Wife" is but a vulgarization of the professional opinion held and promulgated by many physicians; and it needs but a superficial acquaintance with current medical literature, to find the most unqualified condemnation of athletics, and the warnings against their evil consequences.

One writer says they cause hernia and aneurism, another heart disease, while a third asserts that athletes soon grow stale and are short lived. These, with many other alleged hurtful consequences have been put forward with all the pretension of spectacted gravity to give them currency. It is easy to understand from what point of view Mr. Collins regards athletics. Being a small, round shouldered man, with a shambling gait, it is not surprising that his connotation should assume something of a lame man's opinion of dancing, but observation and experience do not justify the deductions of physicians who stigmatize athletics. I have known many hundreds of athletes in different parts of the world, and I have yet to learn of more than one case of hernia resulting from over-exertion. The mechanical impossibility of producing a hernia on a dead body, even if the abdomen be forcibly compressed, if gaps be made in its walls, and the belly subjected to several hundred-weight, and even to horse-power, would seem to demonstrate that hernias do not originate from violent muscular efforts, but are already present, being generally congenital.

Concerning the prevalence of aneurism and heart disease among athletes, there are many current errors that reflect the common judgment. A noted athlete dies of heart trouble, phthisis or paralysis, upon which popular judgment, and regrettable to say, the unthinking medical man draw a post-hoc conclusion. It requires but little thought to upset this fallacy.

Athletes, as a class, are not short lived. On the contrary, many who have led sober and regular

lives have attained extreme old age. It is hardly necessary to refer to the historical mention of Socrates, who at the age of 60, an age when officers of the Army and Navy are retired, served as hoplite in the Peloponnesian war, and though covered with heavy armor took upon his shoulders a wounded man whom he carried into camp while being pursued by the enemy.

In England the general impression among many is that the occupation of pugilist, instead of being hurtful, is a remarkably healthy one, and it is generally admitted that they live longer than any other men. This assertion is supported by facts that are recognized and commented upon by Dr. Royer-Collard in his celebrated work on *Organoplastie Hygènique*. We have numerous instances of old athletes who have not become stale. Many persons have heard of old Gabe Ravel, who at a very advanced age, turned back sommersaults. Frenchmen also know of Madame Saqui, who at the age of 70, in Paris, walked a wire stretched at a great height. Circus men are not only healthy, but long lived. The famous clown of London, Joe Wallet, was ten years ago considerably over 70, and as lively and active as he was forty years previously. Old Orde lived to considerably over 90, and a short time before his death, gave bareback performances. Batty was in the business till past 70, and Franks some years since was tumbling somersaults and posturing at Hengler's considerably over 60, and as fresh as a daisy. An inquiry extending over more than fifty years shows that the men who rowed in the Oxford and Cambridge crews lived on an average longer than the men who did not row. The former champion Greco-Roman wrestler, William Miller, informs me that he knows of many athletes who have attained a good old age, and his opinion, the one held generally by professionals, is that the proper employment of athletics united to a regular life is highly conducive to longevity. Mr. Phineas T. Barnum tells me that he considers the exercises of a well conducted circus to be of the most healthy character, developing the performers chiefly into muscle, and making them the most vigorous people living. As a class, they are long lived, in fact more so than persons in ordinary occupations, especially when they have been temperate. Among very old English pugilists may be mentioned Belasco, Adams, and the older Stevenson. A few years since the sporting papers recorded the death, at an advanced age, of Owen Swift, whose extraordinary career as a prize fighter, may be seen in the musty old files of fifty years ago, he then being in the thirties, while Tom Sayers was still in swaddling clothes, and had already killed one man before Jem Mace was born. Some time since the death of Bendigo, who passed from the prize ring to the pulpit, was reported at 68 years; and during the last year

two other noted pugilists have died at advanced age. One of them, Jem Ward, born in London on Christmas day, 1800, was perhaps the oldest boxer in the world. Most New Yorkers can recall Ottignon and "Pop" Whittaker in this connection. I know yet of an old man of 75, who still puts up his hands in a surprising manner and, barring eye sight, is well preserved.

A few years since, in San Francisco, I was walking in the street with the Secretary of the Olympic Club, who talked to me of this very matter, when we came across a very old man, whom he pointed out as a corroborative instance of what he was telling me. This man in days gone by, had been an athlete of the most violent kind, in fact, a man who had misused athletics by such feats as walking a thousand miles in a thousand hours and other like senseless performances.

The untimely death of several notables who have figured extensively in the athletic world during the last fifteen or twenty years, has, in every instance, as far as could be ascertained, been owing to preventable or to immoral causes, the nature of which it is not necessary here to specify. The possibility of over-exertion being the cause of impaired health in after-life is exceedingly problematical.

The result is rather owing to immoderate indulgence and to the neglect of simple hygienic rules. It is, of course, possible for one to abuse and overdo physical exercise, just as one may do by eating too much bread and thereby poisoning oneself; but enlightened common sense would say that in a misuse of this kind, it is the man, not the bread or the athletics that should bear the blame.

On this subject, Dr. Sargent, of Harvard, tells me that he thinks it but fair to state that in many instances the early demise of athletes cannot be directly attributed so much to the results of athletic work as to the free indulgence of gross appetites and passions which they have not the moral power to control, and where this was not the case, they lived beyond the average. From extensive personal knowledge he knows of but two deaths attributable to over-exertion; the others were from dissipation, and its train of attendant evils. Inquiry seems to establish the fact that the occupation of athletics is more favorable to longevity than many of the mechanical and industrial pursuits, notably those of shoemaker, tailor, baker, clerk or miner; and if further trust may be placed in vital statistics, merchants, capitalists, financiers and persons engaged in the transfer of property have not the same lease of life.

I have now put in light a sufficient number of facts the very opposite from those of other observers, who seem to have limited their sphere of action to but one side of the question.

My collection of facts may be wanting in delicate analysis, and the homogeneity and regularity indispensable to science; but the observation of such as I have brought forward, even when observed without the aid of method, forces upon us the induction that no good reason exists for the wholesale condemnation of athletics. On the contrary, it is evident that the healthy exercise of the physical powers, is one of the necessary pastimes of a manly and vigorous race; and that next to food and sleep athletics has the largest share in the recreation of human life. It is, therefore, high time that the conventional opinion of certain medical men and of some educators on this subject should be set aside, and that all the manly sports should be encouraged, and fostered with a view to promote qualities that intimately concern not only the happiness and usefulness of individual life, but also the good of society, and the future of the human race.

SCARLATINIFORM RASHES.

Read before the St. Louis Medico-Chirurgical Society, Oct. 30, 1888.

BY JOSEPH GRINDON, M.D.,

LECTURER ON DISEASES OF THE SKIN AT THE ST. LOUIS MEDICAL COLLEGE.

There is made no claim of originality for this paper, as it consists simply in a re-arrangement of what is to be found in the text-books and current literature of the day. My object has been to group together in this form those erythemata and other diseases of the skin which may by their resemblance to scarlet fever lead to errors of diagnosis, believing that the setting of old truths in a new light is not devoid of benefit.

The early *roseola of syphilis* may somewhat resemble scarlatina, especially when attended with throat complications and syphilitic fever. It is not necessary to do more than allude to the possibility of mistake here.

It was long since noted, by Sir James Paget, that the wounded are specially predisposed to scarlet fever. This was confirmed later by many eminent French and English observers. Mr. Holmes, while admitting the fact, contended that many so-called cases of "surgical scarlet fever" were really due to septicæmia or pyæmia, to the absorption of some other than the true scarlatinous poison. I believe that the predisposition above spoken of, and also the existence of a *scarlatiniform septicæmic rash*, are now admitted on all sides, but there seems still to be considerable difference of opinion as to the relative prevalence of the two.

The appearance of a scarlet rash in a puerperal woman gives scope for the exercise of one's diagnostic powers. The date of delivery marks a change in the receptivity of woman for the contagious diseases. The pregnant female is *less*,

and the puerperal female is *more* liable than others. Not only so, but the disease is apt to run a malignant course in the latter condition. It is in the occasionally mild cases, however, of scarlatina puerperalis that the difficulties of differentiation arise. For there has been observed a septicæmic rash in this condition essentially the same as that due to sepsis occurring as a surgical complication. It may present, as in a case observed by myself some years ago at the Female Hospital, a most deceptive counterfeit of true scarlatina. Dr. J. C. Thomas, in the *Journal of Cutaneous and Venereal Diseases* for January, 1885, gives the points of differential diagnosis as follows: "The absence of the history of the prodromata of scarlatina, the absence of throat symptoms, the moderate temperature and the moderate amount of constitutional irritation, the history of the development and decline of the eruption and the character of the desquamation." The last is apt to be in large scales and strips. The fever is slight and other evidences of sepsis usually not pronounced. In the three cases reported by the writer just mentioned the rash appeared on the second, fifth and ninth post-partum day, severally. The eruption remained out seven or eight days in these cases. Duhring thinks the rash appears between the third and fifth days.

The period of invasion or first day or two of eruption of variola is sometimes marked by the appearance of an *adventitious rash* which may be roseolar, urticarial or petechial, but which at times, as in a case of mine, simulates true scarlatina of the most intense type. It should be remembered, however, that smallpox and scarlet fever may occur in the same individual at the same time. The adventitious erythema, however, is more short-lived than the exanthem it mimics, and will also be without a history of scarlatinal contagion. Where both contagia are present one may well pause before giving a decided opinion. It was once my fortune to have under my care a family consisting of a mother and three children. The mother and one child had smallpox, another child at the same time had unmistakable scarlet fever, and the third died exsanguine from repeated hæmorrhages from various mucous orifices. Had it not been for a few abortive papules about the wrists, the diagnosis between scarlatina hæmorrhagica and variola hæmorrhagica would not have been made.

Diphtheria is at times accompanied by a cutaneous manifestation which may be scarlatiniform, although oftener roseolar. A case of this kind was reported by me, and another by Dr. Hermann, before this Society last April. Bearing in mind the fact that scarlatina anginosa may present patches of necrotic membrane on the fauces, palate, etc., constituting the so-called "scarlatinal diphtheria," in which the membrane is essentially identical with that found in primary diphtheria,

the difference being, according to most observers, purely etiological, it can easily be seen how difficult the diagnosis between scarlatinal diphtheria and diphtheria with scarlatiniform erythema may become, especially when we add another complicating factor to the problem, which is, that true diphtheria and scarlatina may co-exist in the same individual. J. Lewis Smith claims to have seen cases of uncomplicated primary diphtheria derived from the last named complication, thus establishing, if we accept the observation, the true diphtheritic nature of the process in the last named class of cases.

As to the establishment of the separate identity of "scarlatinal diphtheria" and diphtheria with scarlatiniform rash, we must remember that although there would probably be in both adenopathy and perhaps albuminuria, that in the first named disease there is never, according to Koven and Henoch, secondary paralysis. Of course there may be paresis from inflammation, or necrosis of muscular tissue. The fugacious character of the symptomatic erythema would be its chief diagnostic feature. There have been recognized two forms, one, early, accompanied with but little fever, and another, late, the effect of sepsis.

Dr. Brocq, of Paris, in an article on "Desquamative Scarlatiniform Erythema," in the *Journal of Cutaneous and Venereal Diseases* for August, 1885, from which I draw largely, says that this affection "is characterized by an initial stage of pronounced fever, similar to that of scarlatina; by an intense redness of the entire cutaneous surface, which subsequently peels off in flakes; and by the occurrence of complete recovery in from three to six weeks." After the subsidence of the primary attack the disease tends to reappear three or four times, or even oftener. Hence the word "relapsing" has been prefixed to its designation. The doctor had at the date mentioned collected 14 cases.

The eruption is preceded by a precursory stage of variable duration, sometimes lasting several days, during which there are feelings of discomfort and fatigue, and rigors followed by high fever, attended at times with violent head and back ache.

The point at which the cutaneous lesion first appears is sometimes on the upper and sometimes on the lower part of the body, usually diffusing itself over the whole surface in twenty-four hours, although it may take as long as four to six days. The face, as in scarlatina, is usually not so red as the rest of the body. In a general way it may be said that the extensor surfaces are of lighter tinge than the flexor. The abdomen, however, is often quite dark. The redness can be temporarily obliterated by pressure of the finger.

The time at which desquamation appears can not be accurately determined, but it is often three or four days after the eruption has reached its

height, and while it is still in full florescence. This phenomenon is first noticed at the regions earliest implicated and is remarkable for its flaky character, the flakes being large, thin and transparent, and for its abundance. In one case mentioned by the author from whom the main facts of this description are taken, three litres of scales were collected in five days. On the face the scales are smallest, in fact furfuraceous, and are largest about the neck. On the palms the same desquamation *en masse* may take place as is observed in scarlatina. With the outset of desquamation the constitutional symptoms disappear. The mucous membranes of the throat and eyes are sometimes reddened.

The period of scaling averages between two and three weeks of duration.

The diagnosis between this disease and scarlatina is difficult when we have to do with a first attack, and sometimes only a retrospective diagnosis will be possible. But in this disease the onset is less abrupt than in scarlet fever, the redness of the skin is more marked and often persists after the eighth day, desquamation is more abundant, is lamellated, and frequently repeated. The disease is non-contagious, and nephritis and adenopathy are never present. Cases of this kind have been reported by Besnier, Féréol, Duhring and others, and seem to have been included by Bateman under the head of pityriasis rubra, a name since restricted to a different and much graver affection.

Hardy has described a *scarlatiniform erythema*, the *roseola scarlatiniforme* of Bazin and *erythema punctatum* of M'Call Anderson which lasts from 24 to 48 hours, presents an appearance of the skin almost identical with that of scarlatina, and is followed by some scaling off. It seems always to depend upon gastric derangement and is non-contagious. The points which distinguish it from scarlatina are, that the pulse remains nearly at the normal, the tongue continues to present its normal appearance, and that there are no sequelæ of any kind. Of course it is as liable to occur in one having had scarlatina as in anyone else, and, on the other hand, confers no immunity against that disease.

The early stages of *pityriasis rubra*, or *dermatitis exfoliativa*, may be mistaken for scarlatina. But in the affection known under these two names there are no prodromata, the temperature is generally lower, and the course of the disease, except just at first, altogether different.

I have reserved a brief notice of the best marked of the scarlatiniform rashes due to the ingestion of drugs for the end of this paper. A thorough treatment of even this limited portion of the subject of dermatitis medicamentosa would exceed my powers of performance and yours of attention. The subject is growing every day, because, first, it is not long since it began to receive

the attention it deserves, and second, from its very nature it ever must grow. As new drugs are introduced new drug eruptions will be heard of.

Perhaps the most truly scarlatiniform of these is that produced by *belladonna* or *atropia*. It was this which led believers in the doctrine of similars to use the drug in the treatment and prophylaxis of scarlatina. In this, as in all forms of medicamentous dermatitis, personal idiosyncrasy is the chief etiological factor, the most marked effects sometimes following the smallest doses. Children are said to be more obnoxious to this accident than adults, but that it is by no means confined to them may be illustrated by the following observation.

A lady 67 years of age had a few drops of a solution of the sulphate of atropia, 2 grs. to the ounce, dropped into each eye. She soon complained of dizziness, intense faucial dryness and general pruritus. On examination I found both pupils dilated *ad maximum*, and the face and neck of a bright scarlet hue, which gradually faded and disappeared in something less than twenty-four hours. Six months later the same procedure was followed by the same results. It is manifestly unnecessary here to indicate points of diagnostic difference, but I may be permitted to call attention to the fact that the belladonna eruption is most profuse where the exanthem is usually palest, *i. e.*, about the face.

The *chloral* eruption is sometimes much like that last described, lasts from a half to four hours, and may be followed within twenty-four hours by light desquamation. The occurrence of a relapse after discontinuance of the medicine has been observed and need not cause us to change our minds as to the drug and the erythema bearing to each other the relation of cause and effect.

The cutaneous accident due to the ingestion or absorption of *mercury* is often scarlatiniform. A dose of 2 grains of calomel has been known to bring out a copious eruption.

Opium and *morphine* bring out at times a rash of this type, which, like scarlatina, is apt to be best marked on the flexor surfaces. It is occasionally followed by desquamation, glove and stocking casts having been shed off as in the exanthem. To make the resemblance greater, there is at times an erythematous inflammation of the pharynx.

The *quinine* eruption may at times closely simulate scarlatina. The absence of characteristic prodromata, of sore throat, of the rapid pulse and the characteristic tongue should aid us in detecting the counterfeit. Here again there has been observed desquamation similar to that following the opium rash, as in a case reported to this Society by Dr. Wolfner.

The eruption due to *oil of turpentine* is likewise sometimes followed by desquamation. *Digitalis*, *stramonium*, *strychnia* and *salicylic acid*

might also be mentioned here. The list of drugs which have been known to produce eruptions having some resemblance to that of scarlet fever might be greatly extended, but my desire is to mention only those the effects of which would be most likely to mislead in the particular direction now under consideration. I suppose it is well understood that the medicaments mentioned may produce effects differing widely from those which have been described. In fact it would seem that the particular type of the cutaneous accident depends more upon individual peculiarity than upon the drug administered.

I am chiefly indebted for the facts mentioned in the last part of this brief review to the writings of Arthur van Harlingen and P. A. Morrow, which all may consult with benefit.

AN INTRODUCTION TO THE STUDY OF PNEUMONIC FEVER.

BY EDWARD F. WELLS, M.D.

FIFTH PAPER.—GEOGRAPHY.

Medical geography is, equally with historical pathology, one of the most fruitful means of etiological research. It enables us to become acquainted with the different regions of the globe in which certain diseases prevail, and thus allows upon the grandest scale the study of cosmic, tellurial and even anthropological conditions that may favor or hinder their development.¹

Pneumonic fever prevails in every part of the world, but, as is the case with all other maladies, it is more common in some localities than in others.² It is more prevalent in temperate than in either frigid or torrid regions. Beginning at the poles, its frequency increases in a gradual manner until the maximum is attained at a certain latitude in either temperate zone, and from these points it diminishes as we approach the equator, so that in some tropical countries the malady is somewhat of a nosological rarity.³ This is only true as a general proposition, and there can be found so many apparent exceptions that it is quite clear that latitude alone has no influence over the prevalence of the disease.

The influence of latitude upon the prevalence of pneumonic fever is shown in the following table:

TABLE X.—SHOWING LATITUDINAL PREVALENCE OF PNEUMONIC FEVER.

LOCALITY.	DEATH RATE.	
	Per 100 Deaths.	Per 1,000 Persons
0°-10° North.		
Ceylon . . . . .		.70
Sierra Leone . . . . .		.50
Average . . . . .		.60
10°-20° North.		
Antilles		1.30
Bombay . . . . .		.40
Central America		1.60
Jamaica . . . . .		.30
Madras . . . . .		.70
Average . . . . .		.90
20°-30° North.		
Bengal		1.40
Cuba		1.40
Florida	6.6	.74
San Antonio	1.9	.33
Sandwich Islands	2.0	.61
Averages	3.5	.89
30°-40° North.		
Alabama	9.7	1.35
Algiers		2.10
Arizona	10.3	.75
Arkansas	13.2	2.43
Baltimore	6.5	1.13
Bermuda . . . . .		.60
California	10.6	.74
Charleston	3.6	1.30
Cincinnati	6.7	1.54
Colorado	18.0	1.92
Delaware	6.6	.83
Denver	14.3	1.85
District of Columbia	9.0	2.05
Georgia	7.8	1.09
Gibraltar . . . . .		.70
Kansas	9.0	1.60
Kentucky	8.0	1.09
Knoxville	9.0	1.55
Louisiana	12.7	1.56
Malta . . . . .		.50
Maryland	8.0	1.13
Memphis		2.50
Mississippi	12.2	1.57
Missouri	13.3	2.18
Nevada	20.2	2.36
New Mexico	6.5	1.34
New Orleans	4.4	1.59
North Carolina	5.9	.91
Petersburg	7.0	1.75
Philadelphia	6.2	1.30
Richmond	5.1	1.29
San Francisco	8.0	1.63
Savannah	5.2	1.70
Selma	12.0	2.00
South Carolina	7.6	1.12
St. Louis	6.3	3.77
Tennessee	8.6	1.41
Texas	10.4	1.59
Utah	12.2	2.06
Virginia	7.7	1.24
West Virginia	5.8	.70
Averages	7.8	1.51
40°-50° North.		
Austro-Hungary		2.42
Bavaria . . . . .		.63
Belleville, Ont.	3.7	1.23
Boston	5.3	1.27
Brantford, Ont.	9.0	1.71
Brooklyn	8.0	1.32
Canada		1.09
Chicago	5.5	1.41
Cleveland	5.7	1.15
Connecticut	6.6	.81
Dakota	8.4	1.90
France		1.30
Geneva . . . . .		.63
Guelph, Ont.	4.3	1.13
Hamilton	5.4	1.66
Hartford	7.4	1.09
Idaho	10.8	1.45
Illinois	9.6	1.60
Indiana	9.0	1.00
Iowa	8.1	1.85
Italy . . . . .		.87
Kingston	4.3	.92
London, Ont.	6.2	1.05
Maine	8.3	1.35
Massachusetts	6.6	.80
Michigan	5.8	.90
Milwaukee	5.5	.53
Minnesota	5.0	.52
Montana	9.5	

¹ Charcot, Diseases of Old Age, N. Y., 1881, p. 85.

² Huss—Lungenentzündung, etc., Leipzig, 1861, p. 2—says that the prevalence is everywhere the same.

³ For a discussion of this entire question see Lænnec, Traité de l'Auscultation Mediate, Paris, 1819; Swett, Diseases of the Chest, N. Y., 1856, p. 79; Grisolle, Traité Prat. de la Pneumonie, Paris, 1841, p. 124; Juergensen, Ziemssen's Handb. d. Spec. Path. u. Ther., ap., Leipzig, 1877, Bd. v, S. 13; Fonssagrave, Encycl. des Sci. Méd., T. xviii, 1876, art. Climate; Hirsch, Handb. d. Hist.-Geog. Path., Erlangen, 1860-64, Bd. ii, S. 26; Flint, Am. Jour. Med. Sci., Jan., 1861, p. 17; Green, Quain's Dic. Med., N. Y., 1883, p. 874; Sanders, Am. Jour. Med. Sci., July, 1882, p. 94; Ziemssen, Prager Vierteljahr-schr., 1858.

LOCALITY.	DEATH RATE.	
	Per 100 Deaths.	Per 1,000 Persons.
Montreal	4.0	1.02
Nebraska	7.0	.92
New Brunswick		1.10
Newfoundland . . . . .		.30
New Hampshire	7.7	1.32
New Haven	6.0	1.20
New Jersey	4.8	1.10
New York	7.2	1.03
New York City		2.03
Nova Scotia		1.10
Ohio	6.4	.75
Ontario	5.3	.51
Oregon	4.8	.57
Ottawa	3.5	1.20
Paris		2.56
Pennsylvania	7.3	.97
Pittsburgh	7.6	1.65
Providence	7.2	1.50
Rhode Island	6.4	.90
Rochester	5.5	.90
St. Catharines	7.0	1.13
St. Paul	6.3	.77
St. Thomas, Ont.	7.8	.97
Switzerland	7.8	1.50
Toronto	6.6	1.39
Turin		2.20
Vermont	9.8	1.49
Washington	7.9	.71
Wisconsin	6.9	.78
Wyoming	9.5	.90
Zürich	8.8	2.05
Averages	6.7	1.21
50°-60° North.		
Belfast . . . . .		.44
Belgium . . . . .		.85
Berlin		1.21
Breslau		1.20
Copenhagen		1.71
Cork . . . . .		.46
Denmark		1.57
Dresden . . . . .		.40
Dublin . . . . .		.81
Edinburgh		1.42
England		1.25
Faroe Islands . . . . .		.71
Germany		1.34
Germersheim Garrison	7.6	.40
Ghent		1.21
Halle		2.29
Hamburg	3.3	1.80
Iceland . . . . .		.79
Ireland . . . . .		.27
Leith		1.50
Limerick . . . . .		.60
London		1.69
Netherlands		1.90
New Archangel		2.30
Norway	2.9	.50
Russia		1.05
Scotland . . . . .		.73
Sweden		1.60
Würzburg		1.50
Averages	4.6	1.12
10°-20° South.		
St. Helena . . . . .		.80
20°-30° South.		
Australia . . . . .		.72
30°-40° South.		
Cape Colony . . . . .		.70
Cape Town		1.00
Average . . . . .		.85

RÉSUMÉ.

LATITUDE.	No. of Places.	Per 100 Deaths.				Per 1,000 of Pop.			
		Mean.	Maximum.	Minimum.	Fluctuat'n.	Mean.	Maximum.	Minimum.	Fluctuat'n.
0°-10° North	2					.60	.70	.50	.20
10°-20° "	5					.90	1.62	.30	1.52
20°-30° "	5	3.5	6.6	1.9	4.5	.89	1.40	.33	1.07
30°-40° "	41	7.8	28.2	3.6	16.6	1.51	3.77	.50	3.27
40°-50° "	60	6.7	16.8	4.0	6.8	1.21	2.56	.30	2.26
50°-60° "	29	4.6	7.6	2.9	4.7	1.12	2.30	.27	2.03
10°-20° South	1					.80	.80	.80	.00
20°-30° "	1					.72	.72	.72	.00
30°-40° "	2					.85	1.00	.70	.30
Total and averages	145	7.1	20.2	2.9	17.1	1.27	3.77	.27	3.50

Sanders' claims that in North America pneumonic fever increases in frequency from east to west, whilst in Europe it does so from west to east, but a glance at Table XI shows that longitude alone has but little influence over the prevalence of the disease.

TABLE XI.—SHOWING LONGITUDINAL PREVALENCE OF PNEUMONIC FEVER.

LOCALITY.	DEATH RATE.	
	Per 100 Deaths.	Per 1,000 Persons.
0°-10° West.		
Belfast . . . . .		.44
Cork . . . . .		.46
Dublin . . . . .		.81
Edinburgh		1.42
England		1.25
Faroe Islands . . . . .		.71
Gibraltar . . . . .		.70
Ireland . . . . .		.27
Leith		1.50
Limerick . . . . .		.60
London		1.69
Scotland . . . . .		.73
Sierra Leone . . . . .		.50
St. Helena . . . . .		.80
Average . . . . .		.85
10°-20° West.		
Iceland . . . . .		.79
50°-60° West.		
Newfoundland . . . . .		.30
60°-70° West.		
Antilles		1.30
Bermuda		1.30
Maine	8.3	1.08
New Brunswick		1.10
Nova Scotia		1.10
Providence	7.2	1.50
Rhode Island	6.4	.90
Averages	7.3	1.18
70°-80° West.		
Baltimore	6.5	1.13
Belleville	3.7	.63
Boston	5.3	1.23
Brantford	9.0	1.27
Brooklyn	8.0	1.71
Canada		1.32
Charleston	3.6	1.30
Connecticut	6.6	1.15
Delaware	6.6	.83
District of Columbia	9.0	2.05
Hamilton	5.4	1.13
Hartford	7.4	1.66
Jamaica . . . . .		.30
Kingston	4.3	.87
Maryland	8.0	1.13
Massachusetts	6.6	1.35
Montreal	4.0	1.02
New Hampshire	7.7	1.32
New Haven	6.0	1.20
New Jersey	4.8	1.10
New York	7.2	1.03
Ontario	5.3	.51
Ottawa	3.5	1.20
Pennsylvania	7.3	.97
Petersburg	7.0	1.75
Philadelphia	6.2	1.30
Pittsburgh	7.6	1.65
Richmond	5.1	1.29
Rochester	5.5	.90
Vermont	9.8	1.49
Virginia	7.7	1.24
Averages	6.4	1.12
80°-90° West.		
Alabama	9.7	1.38
Central America		1.82
Chicago	5.5	1.09
Cleveland	5.7	1.41
Cuba		1.41
Florida	6.6	.74
Guelph	4.3	.63
Illinois	9.6	1.48
Indiana	9.0	1.60
Kentucky	8.0	1.09
Knoxville	9.0	1.55
London, Ont	6.2	.90
Michigan	5.8	.80
Milwaukee	5.5	.90
New Orleans	4.4	1.59

TABLE XI—CONCLUDED.

Ohio	6.4	.75
Savannah	5.2	1.70
Selma	12.0	2.00
South Carolina	7.6	1.12
St. Catharines	7.0	1.13
St. Thomas, Ont.	7.8	.97
Tennessee	8.6	1.41
Toronto	6.6	1.39
West Virginia	5.8	.70
Averages	7.1	1.23
90°-100° West.		
Arkansas	13.2	2.43
Cincinnati	6.7	1.54
Dakota	8.4	.81
Georgia	7.8	1.09
Iowa	8.1	1.00
Kansas	9.0	1.60
Louisiana	12.7	1.56
Memphis	2.50	2.50
Minnesota	5.0	.58
Mississippi	12.2	1.57
Missouri	13.3	2.18
Nebraska	7.0	.92
San Antonio	1.9	.33
St. Louis	6.3	3.77
St. Paul	6.3	.77
Texas	11.4	1.59
Wisconsin	6.9	.78
Averages	8.1	1.49
100°-110° West.		
Colorado	18.0	1.92
Denver	14.3	1.85
New Mexico	6.5	1.34
Wyoming	9.5	.90
Averages	12.1	1.50
110°-120° West.		
Arizona	10.3	.75
Idaho	10.8	1.09
Montana	9.5	.82
Nevada	20.2	2.36
Utah	12.2	2.06
Averages	12.6	1.41
120°-130° West.		
California	10.0	.74
Oregon	4.8	.57
San Francisco	8.0	1.63
Washington	7.9	.71
Averages	7.7	.91
150°-160° West.		
Sandwich Islands	2.0	.61
0°-10° East.		
Algiers		2.00
Belgium . . . . .		.85
Denmark		1.57
France		1.90
Geneva		1.30
Ghent		1.21
Hamburg	3.3	1.80
Netherlands		1.90
Norway	2.9	.50
Paris		2.56
Switzerland		1.50
Turin		2.20
Zürich	8.8	2.05
Averages	5.0	1.65
10°-20° East.		
Austro-Hungary		2.42
Bavaria		2.20
Berlin		1.21
Breslau		1.20
Cape Town		1.00
Copenhagen		1.71
Dresden . . . . .		.40
Germany		1.34
Germersheim Garrison	7.6	.40
Halle		2.29
Italy		1.85
Malta . . . . .		.50
Sweden		1.60
Würzburg		1.50
Averages	7.6	1.40
20°-30° East.		
Cape Colony . . . . .		.70
30°-40° East.		
Russia		1.05
40°-50° East.		
New Archangel		2.30
70°-80° East.		
Bombay . . . . .		.40
Madras . . . . .		.70
Average . . . . .		.55
80°-90° East.		
Bengal		1.40
Ceylon . . . . .		.70
Average		1.55
130°-140° East.		
Australia . . . . .		.72

RESUME

LONGITUDE.	No of Places.	Per 100 Deaths.				Per 1,000 Persons			
		Mean.	Maximum.	Minimum.	Fluctuat'n.	Mean.	Maximum.	Minimum.	Fluctuat'n.
0°-10° West	15	..	..	..	..	.85	1.69	.27	1.42
10°-20° "	1	..	..	..	..	.79	.79	.79	.00
50°-60° "	1	..	..	..	..	.30	.30	.30	.00
60°-70° "	8	7.3	8.3	6.4	1.9	1.18	1.50	.90	.60
70°-80° "	31	6.4	9.8	3.5	6.3	1.12	2.05	.30	1.75
90°-90° "	24	7.1	12.0	4.3	7.7	1.23	2.00	.63	1.37
90°-100° "	17	8.1	13.3	5.0	8.3	1.49	3.77	.33	3.44
100°-110° "	4	12.1	18.0	6.5	11.5	1.50	1.92	.90	1.02
110°-120° "	5	12.6	20.2	9.5	10.7	1.41	2.36	.75	1.61
120°-130° "	4	7.7	10.0	4.8	5.2	.91	1.63	.57	1.06
150°-160° "	1	2.0	2.0	2.0	.0	.61	.61	.61	.00
0°-10° East	14	5.0	8.8	3.3	5.5	1.65	2.56	.50	2.06
10°-20° "	14	7.6	7.6	7.6	.0	1.40	2.42	.40	2.02
20°-30° "	1	..	..	..	..	.70	.70	.70	.00
30°-40° "	1	..	..	..	..	1.05	1.05	1.05	.00
40°-50° "	1	..	..	..	..	2.30	2.30	2.30	.00
70°-80° "	2	..	..	..	..	.55	.70	.40	.30
80°-90° "	2	..	..	..	..	1.55	1.40	.70	.70
130°-140° "	1	..	..	..	..	.72	.72	.72	.00
Total and averages	147	7.1	20.2	2.0	18.2	1.27	3.77	.27	3.50

Pneumonic fever is met with more frequently on land than upon the open sea or the smaller sea-islands,⁵ although this is denied by some.⁶

The location of cities in proximity to large bodies of water does not appear to exert that influence over the prevalence of pneumonic fever which one would be led to expect.

Thus, 31 lake or inland seaports show a death-rate of 1.35 per 1,000 inhabitants, annually; 90 inland cities, 1.29 per 1,000; and 58 ocean ports, 1.20 per 1,000. An average of the 179 cities gives an annual mortality of 1.26 per 1,000 of population.

It might be a natural supposition that altitude would exercise a marked influence over the prevalence of pneumonic fever, and yet the statistical material at our disposal is of such a nature as to preclude the arrival at a positive conclusion regarding it.

At high altitudes the atmospheric pressure is very considerably diminished, and if the country is, in addition, mountainous, the inhabitants, in ascending the heights, require increased action of the lungs with a corresponding acceleration of the circulation. Under such conditions it might be supposed that the lungs would be in a condition favorable for the development of pneumonic fever, and that this disease is especially prevalent in such localities is affirmed by many authors.⁷

Thus Lombard,⁸ basing his opinion upon the impression of a large number of the practitioners of the mountain tops and high uplands of Swit-

⁵ Ziemssen, *Präger Vierteljahrschr.*, 1858; Hermann, *Lungenentzündung*, etc., S. 6; Swett, *Dis. Chest*, p. 81.

⁶ Lebert, *Klinik d. Brustkrankh.*, Tübingen, 1874, Bd. i, S. 710; Lépine, *Die Acute lobäre Pneumonie*, Wein, 1883, S. 21.

⁷ Hirsch, *Handb. d. Hist. u. Geog. Path.*, Erlangen, 1864, Bd. ii, S. 36; Lombard, *Traité de Climatol. Méd.*, T. iv, Paris, 1880, p. 392; Waldenburg, *Die Tuberculose*, etc., Berlin, 1869; Brown, *Jour. Am. Med. Ass.*, March 7, 1885, p. 262; LaRoche, *Pneumonia*, Phila., 1831, p. 81; Williams, *Cycl. Prac. Med.*, Vol. iii, p. 407; Grisolle, *Traité de la Pneumonie*, Paris, 1841; Milliken, *Cincinnati Lancet and Clinic*, Dec. 16, 1882, p. 578. ⁸ Op. cit., p. 392.

zerland and Germany, claims that the prevalence of pneumonic fever gradually increases as we ascend from the sea level, and is met with most frequently in localities of the greatest altitude. Hirsch⁹ says that the disease is very common in the South American Andes, the mountain lands of Abyssinia and the elevated plains of Arabia. It is very prevalent in the Allegheny mountains¹⁰ and on the top of Mont Cenis.¹¹

On the contrary, it is rare in the elevated cities of Boulder,¹² Denver,¹³ Ft. Bridger,¹⁴ Sorocco¹⁵ and Mexico,¹⁶ and it has even been claimed that there is a lessening of the prevalence as we ascend toward the highest inhabited mountain regions.¹⁷

The relations of altitude and pneumonic fever are shown in the following table.¹⁸

TABLE XII.—SHOWING RELATION BETWEEN ALTITUDE AND THE PREVALENCE OF PNEUMONIC FEVER

Altitude	LOCALITY		Altitude	LOCALITY	
10	New Orleans	1 59	285	Hamburg	1 80
10	Stamford	1 86	364	Halle	2 30
15	Norfolk	2 21	400	Memphis	2 50
20	Savannah	1 70	506	Rochester	99
20	Baltimore	1 13	540	Cincinnati	1 54
30	Jersey City	1 79	561	Wurzburg	1 50
40	New Archangel	2 30	591	Chicago	1 30
40	Philadelphia	1 30	880	Basle	1 90
45	New York	2 03	940	Burlington	1 30
35	Brooklyn	1 71	1280	Geneva	1 39
40	Boston	1 23	1500	Vinona	81
45	Washington	2 19	1690	Munich	54
150	Marseilles	3 70	5250	Boulder ¹⁹	71
177	Genoa	3 30	5269	Denver ²⁰	1 85
185	Augusta	3 00			
285	Trieste	2 30		Average	1 27

Although pneumonic fever may not be met with so frequently at great elevations, yet in such localities it is very fatal.²¹ Under these circumstances the death-rate bears a large proportion to the actual number of cases or the prevalence.

At an elevation of from 4,000 to 5,000 feet the disease is, probably, not so common as at a lower level, but it is more severe. At an elevation of 7,000 feet or more, epidemics are frequent and the malady is almost always sthenic and malignant, and at an elevation of 10,000 feet it is usually fatal in about three days.²²

EUROPE.—In Europe pneumonic fever prevails

to an extent slightly above the general average, the death-rate being 1.31 per 1,000 inhabitants.²³

Iceland.—On this island pneumonic fever, in common with other thoracic diseases, is comparatively rare,²⁴ it being the cause of 3.2 per cent. of all deaths and an annual mortality of .79 per 1,000 inhabitants.²⁵ In 1863 there prevailed an extensive and very fatal epidemic.²⁶

Norway and Sweden.—In these countries this malady is quite common,²⁷ but varying considerably in different localities.²⁸ The disease pursues an acute course, and when fatal it is rapidly so.²⁹

Faroe Islands.—Here pneumonic fever is less prevalent than the average,³⁰ causing only 4.5 per cent. of the deaths and an annual mortality of .71 per 1,000 persons.³¹

Russia.—The disease causes, in this land, 1.5 deaths per 1,000 of population, although in some parts of the country it is much more prevalent.³²

Denmark.—In this country pneumonic fever prevails somewhat above the average, being responsible for 6.4 per cent. of the deaths and 1.57 deaths per 1,000 persons per annum,³³ although it is higher in Copenhagen.³⁴

Germany.—Throughout the empire this disease prevails very generally, and slightly above the average—a mortality of 1.34 per 1,000 inhabitants per annum.³⁵

In the imperial army, during a period of eight years, pneumonic fever caused 12.3 per cent. of the deaths, although the mortality from this cause was but .47 per 1,000 of force.³⁶ At the Germersheim Garrison, during 26 years, it caused 7.6 per cent. of deaths and a loss of .40 per 1,000 soldiers.³⁷

In Prussia, 3.9 per cent. of the deaths in the kingdom at large, and 7.5 per cent. in 14 of her large cities, arise from this malady.³⁸ In Berlin, during 26 years the annual death-rate was 1.12 per 1,000 of population.³⁹ Breslau gives a death-

²³ Sanders—Am Jour Med Sci, July, 1882—gives the proportion as 1.57 per 1,000.

²⁴ Schliessner, Island undersogt fra et laegeviderskabel synpunkt, Kjobenh, 1849, Hirsch, Hist u Geog Path, Bd 11, S 22, Reynolds Syst Med, Phila, 1880, Vol 11, p 154, Hjaltehn, Edinb Fox, Med Jour, April, 1864, Caton, London Lancet, 1884, Vol 11, p 135.

²⁵ Sanders op cit ²⁶ Hjaltehn, op cit

²⁷ See Halland, Abhandl d Schwed Akad, Bd xxxvi, S 64, Williams, Cycl Prac Med, Vol 11, p 408, Huss, Om Sverges endem Skuld Stockh, 1852, p 2, ²⁸ ²⁹ ³⁰ ³¹ ³² ³³ ³⁴ ³⁵ ³⁶ ³⁷ ³⁸ ³⁹

³⁰ Sanders op cit ³¹ Hjaltehn, op cit

³² See Halland, Abhandl d Schwed Akad, Bd xxxvi, S 64, Williams, Cycl Prac Med, Vol 11, p 408, Huss, Om Sverges endem Skuld Stockh, 1852, p 2, ³³ ³⁴ ³⁵ ³⁶ ³⁷ ³⁸ ³⁹

³⁰ Sanders op cit ³¹ Hjaltehn, op cit

³² See Halland, Abhandl d Schwed Akad, Bd xxxvi, S 64, Williams, Cycl Prac Med, Vol 11, p 408, Huss, Om Sverges endem Skuld Stockh, 1852, p 2, ³³ ³⁴ ³⁵ ³⁶ ³⁷ ³⁸ ³⁹

³⁰ Sanders op cit ³¹ Hjaltehn, op cit

³² See Halland, Abhandl d Schwed Akad, Bd xxxvi, S 64, Williams, Cycl Prac Med, Vol 11, p 408, Huss, Om Sverges endem Skuld Stockh, 1852, p 2, ³³ ³⁴ ³⁵ ³⁶ ³⁷ ³⁸ ³⁹

³⁰ Sanders op cit ³¹ Hjaltehn, op cit

³² See Halland, Abhandl d Schwed Akad, Bd xxxvi, S 64, Williams, Cycl Prac Med, Vol 11, p 408, Huss, Om Sverges endem Skuld Stockh, 1852, p 2, ³³ ³⁴ ³⁵ ³⁶ ³⁷ ³⁸ ³⁹

³⁰ Sanders op cit ³¹ Hjaltehn, op cit

³² See Halland, Abhandl d Schwed Akad, Bd xxxvi, S 64, Williams, Cycl Prac Med, Vol 11, p 408, Huss, Om Sverges endem Skuld Stockh, 1852, p 2, ³³ ³⁴ ³⁵ ³⁶ ³⁷ ³⁸ ³⁹

³⁰ Sanders op cit ³¹ Hjaltehn, op cit

³² See Halland, Abhandl d Schwed Akad, Bd xxxvi, S 64, Williams, Cycl Prac Med, Vol 11, p 408, Huss, Om Sverges endem Skuld Stockh, 1852, p 2, ³³ ³⁴ ³⁵ ³⁶ ³⁷ ³⁸ ³⁹

³⁰ Sanders op cit ³¹ Hjaltehn, op cit

³² See Halland, Abhandl d Schwed Akad, Bd xxxvi, S 64, Williams, Cycl Prac Med, Vol 11, p 408, Huss, Om Sverges endem Skuld Stockh, 1852, p 2, ³³ ³⁴ ³⁵ ³⁶ ³⁷ ³⁸ ³⁹

⁹ Op cit, S 36 ¹⁰ Trans Pa Med Soc Vol 1, p 105

¹¹ Chomel Pneumonie, Leipzig, 1841, S 312

¹² Repts State Board of Health of Colorado

¹³ Ibid

¹⁴ Bartholow, Am Jour Med Sci, April, 1860, p 323

¹⁵ Naphiegy, N Y Journal Med, May, 1855, Muller, Deutsch Klinik, 1857

¹⁶ Newton, Med Topog Mexico, N Y, 1848

¹⁷ Ziemssen, Prager Vierteljahrschr, 1858, Sanders, 1 c

¹⁸ Facts regarding height were obtained from Drake, Dis Int Valley, N A, Vol 1, Cincinnati, 1850, Fossaggrave, Hyg et Ass des

Valles Paris, 1874, p 75, Sanders, Am Jour Med Sci, 1882, and by correspondence

¹⁹ This is from Sanders—op cit—but 1 c

²⁰ Chamberlain—N Y Med Monthly,

Denver with the lowest death rate from it

the United States, and Sanders gives the death rate at 34

the very fat high mountain valleys, with

the spring

Muller

See also Jan, 1882, Med News, Nov 10, 1882, p 578

Chmic Dec 16, 1882, p 578

10, 1882, p 520

rate of 1.20 per 1,000 inhabitants.⁴⁰ In Hamburg the disease is very prevalent.⁴¹ It is very common in Kiel and Tübingen,⁴² and Halle is peculiarly afflicted, showing an average annual death-rate of 2.29 per 1,000 persons, in a series of ten years.⁴³ Bavaria also shows a high mortality rate from this disease.⁴⁴

Austro-Hungary.—In this country the malady prevails to an extent considerably beyond the average—6.9 per cent. of deaths and 2.42 per 1,000 of population.⁴⁵ It is very common both in Vienna⁴⁶ and Budapest.⁴⁷

Switzerland suffers a death-rate from this disease of 1.50 per 1,000 inhabitants, and 7.8 per cent. of her mortality is due to this cause.⁴⁸ The proportion in the Canton Zürich⁴⁹ and in the cities of Zürich⁵⁰ and Geneva⁵¹ are still greater.

Holland is afflicted by this disease in a degree considerably greater than the average,⁵² although it is less prevalent in Ghent.⁵³

Belgium, as a country, does not suffer severely from pneumonic fever, although her two largest cities are slightly above the average.⁵⁴

Great Britain and Ireland.—In Scotland this disease prevails considerably below the average,⁵⁵ even in the cities,⁵⁶ whilst in England and Wales the prevalence is an average one,⁵⁷ being more common in London,⁵⁸ Bristol,⁵⁹ Bolton,⁶⁰ Kendal,⁶¹ Malvern,⁶² Cornwall,⁶³ and some other localities, and less prevalent in Cheltenham,⁶⁴ Sidmouth,⁶⁵ Guernsey⁶⁶ and Devonshire.⁶⁷ It has been thought by some that the malady is now less prevalent than formerly,⁶⁸ and this opinion is apparently supported by statistics.⁶⁹ Ireland is remarkable for its small death-rate—.27 per 1,000 inhabitants—from pneumonic fever.⁷⁰

France.—In this country pneumonic fever is very common,⁷¹ especially on the Alpine and Mediterranean borders,⁷² and in Paris⁷³ and some other cities.

Marseilles is particularly afflicted by this malady. The west winds—here called the mistral—sweep over the Bay of Biscay and down the valley of the Rhone, through the break in the mountains between the Pyrenees and the Maritime Alps, recur frequently during the winter, and are very blighting to animal and vegetable life. In one year, during the months of January and February, when the mistral was unusually protracted and severe, there were more than 2,000 cases of pneumonic fever—two-thirds of which were fatal—in a population of 318,000.⁷⁴

The French Army suffers comparatively little from the disease, only 3.9 per cent. of the deaths during a period of 13 years being due to it.⁷⁵ It is also rare in Havre⁷⁶ and Belle-Isle-in-the-Sea.⁷⁷

Spain and Portugal.—Pneumonic fever is rare in most parts of the peninsula,⁷⁸ although common in Lisbon,⁷⁹ Madrid,⁸⁰ and some other cities.

Italy.—This disease is extremely common in Italy,⁸¹ especially in the northern parts. It is also prevalent in the neighboring Islands.⁸²

Greece.—Pneumonic fever is rare in this country.⁸³

Africa.—In the most parts of this continent from which we have any authentic returns, pneumonic fever is very prevalent,⁸⁴ causing an annual mortality of 3.62 per 1,000 inhabitants,⁸⁵ and 9.1

⁴⁰ Ziemssen, loc. cit.
⁴¹ Ziemssen—loc. cit.—gives the rate as 2.17 and Walton—op. cit.—as 1.80 per 1,000 inhabitants.

⁴² Juergensen, Ziemssen's Handb. d. Spec. Path. u. Therap., Leipzig, 1877, Bd. v, S. 23.

⁴³ Bärensprung, Epidem. Krankh. in Halle, 1854.

⁴⁴ Klinger, Lungenkrankh. in Bayern, München, 1874; Sanders, loc. cit. ⁴⁵ Sanders, op. cit.

⁴⁶ Juergensen, op. cit., S. 12.

⁴⁷ Purjesz, Wiener Med. Wochenschr., 1884, Nr. 2, S. 43; Hampeis, Oest. Med. Jahrb., 1846, Bd. iii, S. 108.

⁴⁸ Sanders, op. cit.

⁴⁹ Weller, Inaug. Diss., Zurich, 1854—8.4% and 1.98 per 1000.

⁵⁰ Ziemssen, op. cit.; Jahresb., d. Gesundh., Zürich, 1848, ff.

⁵¹ D'Espine, Mortal. du Canton de Genève en, 1838, Paris, 1840.

⁵² Severin, Nederl. Weekbl. voor Geneesk., 1855, Nos. 22-23;

Sanders—loc. cit.—gives the proportion as 7.5 per cent. of deaths and 1.90 per 1,000 of population.

⁵³ Ziemssen, op. cit.

⁵⁴ Sanders, op. cit.

⁵⁵ Orr—Edinb. Med. and Surg. Jour., Vol. lxiii—Steele—Ibid., Vol. lxxii—and Stark—Ibid., Vols. lxxv and lxxvi—considered the disease very prevalent, but their figures, when compared with others, do not confirm their belief.

⁵⁶ Sanders, op. cit.

⁵⁷ Farr, Reg. Gen. Rpts.; Sanders, op. cit.

⁵⁸ West, Brit. and For. Med. Chir. Rev., Vol. xv, p. 543; Sanders, op. cit.; Blane, Select Diss., Vol. i, p. 205.

⁵⁹ Symonds, Trans. Prov. Med. Soc., Vol. ii.

⁶⁰ Black, Ibid., Vol. v.

⁶¹ Proudfoot, Edinb. Med. and Surg. Jour., Vol. xviii, p. 374.

⁶² Forbes, Prov. Med. Trans., Vol. iv, p. 173.

⁶³ Addison, Ibid., p. 137.

⁶⁴ Nash, Ibid., Vol. vi, p. 251.

⁶⁵ Jeffrey, Ibid., vol. ix, p. 207.

⁶⁶ Haskins, London Jour. Med., Aug., 1852.

⁶⁷ Shapter, Climate of South Devon, London, 1842.

⁶⁸ Harrison, Rot in Sheep.

⁶⁹ Ziemssen, op. cit.; Sanders, op. cit.; Farr, op. cit.

⁷⁰ Ziemssen, op. cit.; Sanders—op. cit.—gives the proportion as .31 per 1,000.

⁷¹ Sanders, op. cit.; Hirsch, op. cit.; Larsé, Jour. de Méd., T. lxxxviii, p. 340; Germain, Ann. d'Hyg., July, 1850, p. 130; Bianchi, Jour. de Méd., T. lxvi, p. 171; Graullat, Hist. de la Soc. de Méd. de Paris, T. i, p. 192; Didelot, Ibid., T. ii, p. 136; Meyer, Méd. Topog. Ober-Ehnhelm, Strassb., 1841; Lépine, Pneumonie, 1883, p. 21; Bonafos, Obsv. de Méd., T. ii, p. 62; Lucadou, Mal. les plus familiares à Rochefort, etc., Paris, 1787, p. 187; Grisolle, Traité de la Pneumonie, 1841; Laennec, Traité de l'Auscult. Médiate, Paris, 1819; et al.

⁷² Matagrín, Gaz. Méd. de Lyon, 1858, No. 14; Raymond, Hist. de la Soc. de Méd. de Paris, T. ii, p. 19; et al.

⁷³ Ziemssen, op. cit.; Juergensen, op. cit., S. 12; Roux, Hist. Méd. de l'Armée en Morée, p. 84; Trebuchet, Ann. d'Hyg., T. xlii, p. 20.

⁷⁴ Gibbs, U. S. Naval Repts., 1881, p. 410.

⁷⁵ Lavéran, Ann. d'Hyg., 1860.

⁷⁶ Gibert, Quoted by Lépine, op. cit., p. 21.

⁷⁷ Cabrol, Mém. de Méd. Mil., T. vi, p. 51.

⁷⁸ Boudin, Geog. Méd., p. 85; Guthrie, London, Phys. and Med. Jour., Vol. lxiv, p. 187; Martínez, Topog. Méd. Malaga, 1852; Greg-

ory, London Med. Gaz. Vol. ii, p. 78; Wallace, Edinb. Med. and Surg. Jour., Vol. xxxi, p. 76; Thierry, Obsd. de Méd., Paris, 1791;

Faugère, Souvenirs du Midi, etc.; Tulloch, op. cit.; Hennen, Méd. Topog. Méditerranéen, p. 498; Dickson, U. S. Naval Rpts., 1879, p. 533.

⁷⁹ Penrose, U. S. Naval Reports, 1879, p. 578.

⁸⁰ Sturges, Nat. Hist. Pneumonia, London, 1876, p. 161.

⁸¹ LaRoche, Pneumonia, Phila., 1854, p. 62; Hirsch, op. cit., S. 23; Mammi, Filiatr. Sebez., Nov. 1842; Guislain, Lettre Méd. sur l'Italie, Gand, 1840; Menis, Topog. Statist. Méd. della Provincia di Brescia, Bresc., 1837; Cerioli, Omodei Ann. Univ., 1820, Jan. 11; Hil-

debrand, Ann. Schol. Clin. Ticin., Pap., 1826, Vol. i, p. 119; Savio, Sulla Topog. Med. del Sicomario, Fav., 1846; Valentini, Voyage Méd. en Italie, Nancy, 1822, p. 141; Sturges, op. cit., p. 566;

Prax. Méd., Lib. ii, p. 315; Fox, op. cit.; Dickson, op. cit.; Mém. Carrière, Le Climat de l'Italie, Paris, 1849; Sanders, op. cit.; Mém. de l'Acad. de Méd., T. xiv, p. 230; Ann. d'Hyg., T. xxx, p. 58, T. xxxv, p. 5, T. xxxvi, p. 304.

⁸² Fox, op. cit., p. 154; Clark, On Climate, p. 121; Hirsch, op. cit., S. 23; Dickson, op. cit.; Tulloch, op. cit.; Vanucci, Bull. de l'Acad. de Méd., du 29 Mai, 1838; Morris, Voyage en Sardaigne, Paris, 1852;

Cleghorn, Ep. Dis. in Minorica, London, 1762; Irvine, Obsv. Dis. Sicily, London, 1810.

⁸³ See Landerer, Arch. de Pharmacie, 1851; LaRocoe, op. cit., p. 63; Hippocrates—De Morb., Lib. ii—considered it common in his day.

⁸⁴ Cateloup, De la Pneumonie d'Afrique, Paris, 1853.

⁸⁵ Sanders, op. cit.; Ziemssen, op. cit.

per cent. of the deaths.⁸⁶ It is especially prevalent in Algiers,⁸⁷ Chamounix,⁸⁸ Constantine,⁸⁹ Arabia,⁹⁰ Capeland,⁹¹ South Africa,⁹² Senegambia,⁹³ West Coast⁹⁴ and other places, whilst it is less prevalent or rare in Egypt,⁹⁵ Abyssinia,⁹⁶ Bone,⁹⁷ Morea,⁹⁸ environs of Sahara,⁹⁹ the Eastern Coast,¹⁰⁰ Madeira,¹⁰¹ Mauritius,¹⁰² Azore Islands,¹⁰³ St. Helena,¹⁰⁴ St. Domingo,¹⁰⁵ Martinique,¹⁰⁶ etc.

Asia.—Pneumonic fever is not common in most parts of this continent. It is rare in Hindostan,¹⁰⁷ except in the northern districts,¹⁰⁸ Burmah,¹⁰⁹ Pegu,¹¹⁰ Ceylon,¹¹¹ the East India Islands,¹¹² Australia,¹¹³ etc., whilst it is common in China,¹¹⁴ Corea,¹¹⁵ Japan,¹¹⁶ the South Pacific Islands,¹¹⁷ Van Diemen's Land,¹¹⁸ New Caledonia,¹¹⁹ New Zea-

land,¹²⁰ Gambier Island,¹²¹ Sandwich Islands,¹²² Riouw and Lingga Islands,¹²³ Nicobaren,¹²⁴ Ten-esserim,¹²⁵ Kamschatka,¹²⁶ Siberia,¹²⁷ Persia,¹²⁸ Turkey,¹²⁹ Syria,¹³⁰ Armenia,¹³¹ Donau,¹³² and other places.

North America.—Here pneumonic fever was common amongst the Aztecs of Mexico¹³³ and the Indian tribes roaming over the United States and Canada in past centuries,¹³⁴ and continues to prevail extensively in every part of the continent.

Arctic Basin.—Pneumonic fever has been rarely met with in Arctic expeditions¹³⁵ or in the hunting stations of the far north,¹³⁶ save in Greenland, where it is common.¹³⁷ In Alaska and the neighboring islands it does not often appear, but, when it does so, is very destructive.¹³⁸ It is very prevalent in Lower Canada,¹³⁹ the Maritime Provinces,¹⁴⁰ Maine,¹⁴¹ New Hampshire,¹⁴² Vermont,¹⁴³ Massachusetts,¹⁴⁴ Northern New York,¹⁴⁵ New York City,¹⁴⁶ Brooklyn,¹⁴⁷ Hartford,¹⁴⁸ Philadelphia,¹⁴⁹ Cleveland,¹⁵⁰ Pittsburgh,¹⁵¹ Petersburg,¹⁵² District of Columbia,¹⁵³ Cincinnati,¹⁵⁴ Indiana,¹⁵⁵

⁸⁶ Chamberlain, N E Med Mon, 1883, p 406
⁸⁷ Laveran, op cit, p 28, Bertherand, Méd et Hyg des Arabes d'Algérie, Paris, 1855, Deleau, Rec Mém de Méd Mil T lu, p 115, Ziemssen, op cit, et al Some others have considered it uncommon. See Haspel, Mal de l'Algérie, Paris, 1852, T ii, p 418, Finot, Rec Mém de Méd Mil, T lvi, p 1, Cambay, Ibid, T. lvi, p 1, Villetle, Ibid, T lu, p 151, et al

⁸⁸ Sturges, op cit, p 154
⁸⁹ Boudin, Geog Méd, p 80
⁹⁰ Prunner, Krankheiten des Orients, Erlangen, 1847
⁹¹ Tulloch, Army Reports, 1840, Kretzschmar, Sudafrikaischen Skizzen, Leipzig, 1853, Schwarz, Zeitsch d Wien, Aerzte, 1858
⁹² Livingstone, Deutsche Klinik, 1858, Nr 42

⁹³ Thérénat, Traité des Mal des Europ dans les Pays Chauds, Paris, 1840, Rafflen, Voyage dans l'Afrique Occidentale, Paris, 1846, Berville, Mal des Senegal Paris, 1857

⁹⁴ Moreira, Jour de Scien-Méd de Lisbon, xv, 121, Boyle, Med-Chir Act Western Coast of Africa, London, 1831, p 396, Dauell, Med Topog Gulf of Guinea, London, 1849, Ritchie, Edinb Med and Surg Jour, 1852, April and June

⁹⁵ Richardson, Travels in Egypt, Vol 1, p 392, Barclay, Edinb Med and Surg Jour, Vol lxxx, p 656, Griesinger, Arch f Phys Heilk, Bd xii, Prunner, op cit, Hirsch, op cit
⁹⁶ Courbon, Topog Méd Sur, Paris, 1861, p 31, Aubert Roche, Ann d'Hyg, T xxxii, p 21, Prunner, op cit It is here not so uncommon as in Egypt. See Hirsch, op cit

⁹⁷ Maillot, Int Elev, p 114
⁹⁸ Roux, Hist Méd l'Armée en Morea
⁹⁹ Hirsch, op cit, S 24

¹⁰⁰ Sturges, op cit, p 154
¹⁰¹ Hochlung, U S Naval Reports, 1886, p 12, Kampter, Hamburger Zeitsch f Med, Bd xxiv, S 156, Gourlay, Nat Hist Madeira, London, 1811, Mittermaier, Maderna u seine Bedeutung als Heilgort, Heidelberg, 1855

¹⁰² Lesson, Voyages, etc, p 143, Couzier, Jour de Méd, T vii, p 406, Allan, Edinb Med Jour, 1841, p 560, Dutronleau, Mal des Européens les Pays Chauds, Paris, 1861, p 51

¹⁰³ Hirsch, op cit, S 5
¹⁰⁴ Tulloch, Army Reports, 1840, Hirsch, op cit, S 24
¹⁰⁵ Despartes, Mal de St Domingo T 1, p 32

¹⁰⁶ Grissolle, Traité de la Pneumonie, Paris, 1841, p 132
¹⁰⁷ Hunter London Med Gaz, 1847, Vol 1, p 8, and 1850, Vol ii, pp 367-578, Fox, op cit, Moorehead, Dis India, Vol ii, p 308, Twining, Dis Bengal, Calcutta, 1835, Vol 1, Sturges, op cit, p 154, LaRoche, op cit, p 63, Sanders, op cit, p 82, Gordon, Lon Med Times and Gazette, 1856, Vol ii, p 188, Henderson, Madras Quart Med Jour, Vol iii, p 328, Voigt, Bibl f Lager, 1833, Hft iii, S 36, Kinnis, Edinb Med and Surg Jour, Vol lxxxv, p 256, Evans, Ibid, July, 1855, Webb, Path India, London, 1848, p 100, Don, Bombay Med Trans, Vol iii, p 10

¹⁰⁸ Hyre Madras Jour Med Sci, Oct, 1860, p 332, Dunbar, Ind Jour Med and Phys Sci, Vol 1, p 443, Hunter, Bombay, Med Trans, Vol ii, p 32, Young, Calcutta Med Trans, Vol iv, p 36, Webb Path Ind, London, 1848, p 100, Marston, Trans Int Med Congress, Wash, 1887, see N Y Med Record, Sept 10, 1887, p 320

¹⁰⁹ Dawson, g Jour, Vol lxxxi, p 248, 1853, May

¹¹⁰ April, 1854, p 432
¹¹¹ Grissolle, op cit, p 130, Davy, Interior of Ceylon, p 493, Marshall, Med Topog Ceylon, London, 1822, p 39

¹¹² Heymann, Krankh d Tropenlander, Würzb, 1855, S 158, Lesson, Voyage Méd, etc, Paris, 1829, p 97, Hattem, Nederl Tijdschr voor Geneesk, ii, 538, Sanders, op cit, p 82, Hirsch, op cit, Shaw, U S Naval Reports, 1879, p 138, LaRoche, op cit, p 63

¹¹³ Sanders, op cit It is considered very prevalent here by some authors. See Hirsch, op cit, S 24, Lesson, op cit, p 112, Clutterbuck, Port Philipp in 1849 London, 1850

¹¹⁴ Turner, U S Naval Reports, 1879, p 292, Remy, Arch Gen de Méd, March, 1883, Hirsch, op cit, S 24, Woods, U S Naval Reports, 1886, pp 54-65, Wilson, Med Notes on China, Lond, 1846, p 50, Hobson London Med Times and Gaz, Nov, 1860, p 478, and December, p 632, Armand, Gaz Méd de Paris, 1861, p 201

¹¹⁵ Turner, op cit, p 292
¹¹⁶ Woods, op cit, pp 54-65
¹¹⁷ Wilkes, U S Explor Expedition, Vol iii, p 32

¹¹⁸ Dempster, Calcutta Med Trans, Vol vii, p 357, Hirsch, op cit, S 24

¹¹⁹ Vinson, Topog Méd Nouv Caledonie, Paris, 1858
¹²⁰ Thompson, Brit and For Med Chir Rev, Oct, 1854

¹²¹ Lesson Voyage aux Isles Mangareva, Rochefort, 1845
¹²² Chamberlain, op cit, Chapin, Am Jour Med Sci, May, 1837, Haold, Notes on Sandwich Islands, London, 1854, Gulick, N Y Jour Med, March, 1855, Hirsch, op cit, S 24

¹²³ Meyer, Nederl Tijdschr voor Geneesk, iii 327
¹²⁴ Steen Bills Reise d Corvette Galatea um die Welt, Leipzig, 1852, Bd 1, S 244

¹²⁵ Ward and Grant, Med Topog, Malacca, 1830
¹²⁶ Bogonodsky, Med Zeit Russl, 1854 S 1, Hirsch, op cit, p 25

¹²⁷ Gebler Ann d Heilk, 1813 S 330, Rex, Med Zeit Russ, 1859
¹²⁸ Polack, Wiener Med Wochenschr, 1854, Nr 48 1855, Nr 17

¹²⁹ Rigler, Die Turkey u deren Bewohner, Wien, 1852, Bd ii, S 220, Beyrau, Gaz Méd de Paris, 1854, p 343

¹³⁰ Prunner, Krankh d Orients Erlangen, 1847, S 283, Robertson, Edinb Med and Surg Jour, Vol lux, p 247, Tobler, Topog Jerusalem, Breslau, 1855, S 36

¹³¹ Wagner, Reise nach dem Arrarat, Stutt, 1848
¹³² Schmalz, Deutsche Klinik, 1852, Nr 39

¹³³ Bancroft Pacific States, Vol ii, p 592
¹³⁴ Rush Hist Med among the Indians, London, 1789, p 20

¹³⁵ Parry's Second Voyage, Beck's Narrative, Ross, Trans Royal Soc, 1836, part 1, p 52, Fox, Reynold's Syst Med, Phila, 1860, Vol ii, p 154, Sturges, Nat Hist Pneumonia, London, 1876, p 154

¹³⁶ Rosse, Cruise of the Corwin, Wash, 1883, Hirsch, op cit
¹³⁷ Andrew London Lancet, 1884 Vol 1, p 695, Of 162 deaths at Moose, in 71 years, not one was from pneumonic fever

¹³⁸ Cranz, Hist von Grunland, Barby, 1770, Hirsch, op cit, S 25
¹³⁹ Wythe Pacific Med and Surg Jour, 1871, Rosse, op cit, pp 18-23

Personal Com from Gen Scribner Brooke, speaking of the execrable climate, says that "it might naturally be supposed that in such a climate acute pulmonary inflammations would be very common but such is not the case" Quoted by Rosse, op cit, p 17

¹⁴⁰ McCord Am Jour Sci, Vol iii, Report Health Officer Montreal, 1837, Tulloch, op cit, Drake, Dis Int Valley, Vol 1

¹⁴¹ Tulloch, op cit, 1853
¹⁴² Report State Board Health, 1885, Witherspoon, in Coolidge's Statistical Rpt U S Army, Washington, 1856, pp 27-29

¹⁴³ Registration Report 1885
¹⁴⁴ U S Census Reports, 1880, Gallup, Epidemics of Vt, Boston, 1815

¹⁴⁵ Registration Report, 1881, Cleborn, U S Naval Rpts, 1879
¹⁴⁶ Coolidge, Statistical Reports, Washington, 1856, Flint, Am Jour Med Sci, Jan, 1851, U S Census Rpts, 1880, Rpts State Bd Health, 1878, 79 85, Lee, Copland's Med Dic, N Y, 1855, Vol ii, p 891

¹⁴⁷ Dunne Am Jour Med Sci, May, 1838, Reports of Board of Health

¹⁴⁸ Board of Health Report, 1878
¹⁴⁹ Board of Health Report, 1887, Report State Bd Health of Connecticut, 1885

¹⁵⁰ Registration Report for 1876
¹⁵¹ Report Board of Health 1878-87

¹⁵² Reports Board of Health, 1880-1-2-3-4-5-6-7
¹⁵³ Report Board of Health, 1879

¹⁵⁴ Reports Board of Health, 1878-80-82
¹⁵⁵ Report Board of Health, 1856, Drake, op cit

¹⁵⁶ Rpts Bd Health, 1884-85-86, U S Census Report, 1880

Missouri,¹⁶⁵ St. Louis,¹⁶⁷ Memphis,¹⁶⁴ Arkansas,¹⁶⁹ Kansas,¹⁶⁰ Louisiana,¹⁶¹ Texas,¹⁶² New Orleans,¹⁶³ Mississippi,¹⁶⁴ Savannah,¹⁶⁵ Selma,¹⁶⁶ Knoxville,¹⁶⁷ Tennessee,¹⁶⁸ Alabama,¹⁶⁹ Charleston,¹⁷⁰ Columbia,¹⁷¹ Richmond,¹⁷² Illinois,¹⁷³ New Mexico,¹⁷⁴ Colorado,¹⁷⁵ Denver,¹⁷⁶ Utah,¹⁷⁷ Nevada,¹⁷⁸ San Francisco,¹⁷⁹ etc.,¹⁸⁰ whilst it is less common in Boston,¹⁸¹ New Haven,¹⁸² Connecticut,¹⁸³ New Jersey,¹⁸⁴ Maryland,¹⁸⁵ Baltimore,¹⁸⁶ Virginia,¹⁸⁷ Georgia,¹⁸⁸ South Carolina,¹⁸⁹ North Carolina,¹⁹⁰ Delaware,¹⁹¹ Pennsylvania,¹⁹² Rhode Island,¹⁹³ Providence,¹⁹⁴ Southern New York,¹⁹⁵ Rochester,¹⁹⁶ Kentucky,¹⁹⁷ Ohio,¹⁹⁸ Chicago,¹⁹⁹ Milwaukee,²⁰⁰ Wisconsin,²⁰¹ Michigan,²⁰² Minnesota,²⁰³ St. Paul,²⁰⁴ Nebraska,²⁰⁵ Dakota,²⁰⁶ Montana,²⁰⁷ Wyoming,²⁰⁸ Iowa,²⁰⁹ Idaho,²¹⁰ Washington,²¹¹ Oregon,²¹² California,²¹³ Arizona,²¹⁴ West Virginia,²¹⁵ San Antonio,²¹⁶ Florida,²¹⁷ Ontario,²¹⁸ and other places.

The high plateaus of Mexico afford a large amount of pneumonic fever,²¹⁹ and even the Gulf coast is considerably afflicted.²²⁰ It is rare on the west coast.

Pneumonic fever is comparatively rare in Central America,²²¹ Bermuda,²²² Jamaica,²²³ Cuba,²²⁴ the Antilles,²²⁵ St. Domingo,²²⁶ Trinidad,²²⁷ and the other West Indian Islands.²²⁸

South America.—On this continent pneumonic fever is responsible for an annual death-rate of 1.61 per 1,000 of population, and 5.8 per cent. of all deaths.²²⁹ It is rare in Panama,²³⁰ the Marañon Valley,²³¹ and a few other places, but it is common in Ecuador,²³² Guiana,²³³ Brazil,²³⁴ Peru,²³⁵ Buenos Ayres,²³⁶ Chili,²³⁷ and other parts.²³⁸

REPORTS FROM HOSPITALS.

SURGICAL CLINICS AT THE WESTERN PENNSYLVANIA HOSPITAL BEFORE THE STUDENTS OF THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

BY PROFESSOR J. B. MURDOCH,

SURGEON TO THE WESTERN PENNSYLVANIA HOSPITAL AND PROFESSOR OF CLINICAL SURGERY IN THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

[Reported by WILL. N. PRINGLE, M.D., a member of the Graduating Class.]

September 29, 1888.

EXCISION OF KNEE-JOINT.

Patient, æt. 47, male, and by occupation a coal miner, has always enjoyed good health and is at present in robust condition. His parents were healthy; his father died at the age of 56 years,

- ²¹⁹ Fox, op. cit., p. 154; Newton, Med. Topog. City of Mexico, N. Y., 1848; Müller, Deutsche Klinik, 1857; Hammond, in Coolidge's Reports, p. 419; Mexicanische Zustände, Stuttgart, 1837, Bd. i, S. 21; Naphegyi, N. Y. Jour. Med., May, 1855.
- ²²⁰ Culbreth, U. S. Naval Reports, 1879, p. 179.
- ²²¹ Sanders, op. cit., p. 82; Buel, Am. Jour. Med. Sci., Jan., 1859, p. 131; Wagner u. Scherzer, Die Republik Costa Rica, Leipzig, 1856; Bernhard, Deutsche Klinik, 1854, Nr. 8.
- ²²² Tulloch, op. cit.; Fox, op. cit., p. 154.
- ²²³ Hunter, Bemerck ii. des Krankh. d. Truppen auf Jamaica, Leipzig, 1792, S. 222; Tulloch, op. cit.
- ²²⁴ Sanders, op. cit., p. 82; Hirsch, op. cit., S. 25; Morlet, Voyage dans l'Amerique Centrale, Paris, 1857, T. ii, p. 660.
- ²²⁵ Tulloch, op. cit., 1838; Hunter, op. cit.; Ruffz, Mém. de l'Acad. de Méd., T. x; Dutroulau, Traité, etc., Paris, 1861, p. 35; Despartes, Mal. de St. Dominique, Paris, 1770, T. i, p. 32.
- ²²⁶ Despartes, op. cit., T. ii, p. 134.
- ²²⁷ McCabe, Edinb. Med. and Surg. Jour., Vol. xiv, p. 593.
- ²²⁸ Chisolm, Climate and Diseases of Tropical Countries, London, 1822, p. 104.
- ²²⁹ Sanders, op. cit.
- ²³⁰ Clark, U. S. Naval Reports, 1886, p. 22.
- ²³¹ Galt, Am. Jour. Med. Sci., January, 1873, p. 116.
- ²³² Hirsch, op. cit., p. 7.
- ²³³ Schöller, Obsv. super Morb. Surinam, Götting., 1781; Schwarz, Zeitschr. Wiener Aenzt, 1858, S. 578; Laure, Mal. de la Guayne, Paris, 1859, p. 46; Segond, Rev. Méd., Nov., 1836; Bajon, Geschichte von Cayenne, Erf., 1780, Bd. ii, S. 60; Campet, op. cit., p. 210.
- ²³⁴ Rendu, Topog. Méd. Brésil, Paris, 1848, p. 67; Schwarz, op. cit., S. 578; Sigaud, Climat et des Mal. Brésil, Paris, 1844, p. 112.
- ²³⁵ Smith, Edinb. Med. and Surg. Jour., Vol. lvii, p. 359; Tschudi, Oestr. Med. Wochenschr., 1846, p. 660.
- ²³⁶ Brunel, Obsv. Topog., etc., dans le Rev de la Plata, Paris, 1842, p. 36.
- ²³⁷ Gilliss, Deutsche Klinik, 1856, Nr. 24; Lafarque, Bull. de l'Acad. de Méd., T. xvii, p. 189.
- ²³⁸ Stephenson, U. S. Naval Reports, 1881, p. 269.

- ¹⁵⁶ U. S. Census Report, 1880.
- ¹⁵⁷ Report Board Health, 1884-85-86.
- ¹⁵⁸ Grant, Am. Jour. Med. Sci., July, 1853, p. 94.
- ¹⁵⁹ U. S. Census Report, 1880; Sanders, op. cit., p. 82.
- ¹⁶⁰ U. S. Census Report, 1880.
- ¹⁶¹ Stark, Edinb. Med. and Surg. Jour.; U. S. Census Rpt., 1880.
- ¹⁶² U. S. Census Report, 1880; Swift, in Coolidge's Rpts., p. 378; Crawford, Coolidge's Rpts., p. 386.
- ¹⁶³ Stark, op. cit., Vol. lxxv, p. 130; U. S. Census Rpts., 1880.
- ¹⁶⁴ U. S. Census Reports, 1880; Sanders, op. cit.
- ¹⁶⁵ Report Vital Statistics.
- ¹⁶⁶ Report Board Health, 1876.
- ¹⁶⁷ Report Board Health, 1878.
- ¹⁶⁸ U. S. Census Reports, 1880.
- ¹⁶⁹ Heustis, Am. Jour. Med. Sci., May, 1831, p. 94.
- ¹⁷⁰ U. S. Census Report, 1880, Reports Board Health.
- ¹⁷¹ Gibbs, Am. Jour. Med. Sci., Oct., 1842.
- ¹⁷² Board Health Reports.
- ¹⁷³ U. S. Census Reports, 1880; State Board Health Reports.
- ¹⁷⁴ Coolidge, Statist. Reports; U. S. Census Reports, 1880.
- ¹⁷⁵ U. S. Census Reports, 1880.
- ¹⁷⁶ Chamberlain, N. E. Med. Mon., 1883; U. S. Census Rpts. 1880.
- ¹⁷⁷ Bartholow, Am. Jour. Med. Sci., April, 1860, p. 323; U. S. Census Reports, 1880.
- ¹⁷⁸ U. S. Census Reports, 1880.
- ¹⁷⁹ Report Board Health, 1878-81.
- ¹⁸⁰ It is very common among the Indians of Indian Territory. Coolidge, Reports, p. 269.
- ¹⁸¹ Board Health Reports.
- ¹⁸² Board Health Reports.
- ¹⁸³ Reg. Report, 1886; U. S. Census Reports, 1880.
- ¹⁸⁴ Boyson, Trans. Int. Med. Cong., 1887; U. S. Census, 1880.
- ¹⁸⁵ U. S. Census Reports, 1880; U. S. Naval Reports, 1879, p. 853.
- ¹⁸⁶ Niles and Russ, Med. Statist., N. Y., 1827; Joynes, Am. Jour. Med. Sci., Oct., 1850, p. 297; Board Health Reports, 1878-86.
- ¹⁸⁷ U. S. Census Reports, 1880.
- ¹⁸⁸ Posey, Trans. Am. Med. Ass'n, Vol. x.
- ¹⁸⁹ U. S. Census Reports, 1880.
- ¹⁹⁰ Tidyman, Phila. Jour. Med. and Phys. Sci., August, 1826.
- ¹⁹¹ U. S. Census Reports, 1880.
- ¹⁹² Callaghan, Am. Jour. Med. Sci., Nov., 1828, p. 36.
- ¹⁹³ Registration Reports; U. S. Census Reports, 1880.
- ¹⁹⁴ Snow, Reports Health Officer, 1877-78-79-80.
- ¹⁹⁵ U. S. Census Reports, 1880.
- ¹⁹⁶ Reports Board Health.
- ¹⁹⁷ U. S. Census Reports, 1880.
- ¹⁹⁸ Hildreth, Am. Jour. Med. Sci., Feb., 1830, p. 321.
- ¹⁹⁹ Reports Board Health, 1878-80-86.
- ²⁰⁰ Report Board Health, 1878.
- ²⁰¹ U. S. Census Reports, 1880.
- ²⁰² U. S. Census Reports, 1880.
- ²⁰³ Reports State Board Health, 1879; U. S. Census Rpts., 1880.
- ²⁰⁴ Board Health Reports, 1886-7.
- ²⁰⁵ Sanders, op. cit.; U. S. Census Reports, 1880.
- ²⁰⁶ Stuver, Phila. Med. News, April 29, 1882, p. 455.
- ²⁰⁷ U. S. Census Reports, 1880.
- ²⁰⁸ U. S. Census Reports, 1880.
- ²⁰⁹ Bradford, Notes on the Northwest, N. Y., 1846.
- ²¹⁰ U. S. Census Reports, 1880.
- ²¹¹ Hayden, Coolidge's Reports, p. 478; U. S. Census Rpts., 1880.
- ²¹² U. S. Census Reports, 1880.
- ²¹³ Blake, Am. Jour. Med. Sci., July, 1852, p. 53; Griffin, Coolidge's Reports, p. 478; Stillman, Edinb. Med. and Surg. Jour., Vol. lxxviii, p. 275; Fenn, Jour. Am. Med. Ass'n, April 17, 1886, p. 425; Tyrrell, Report State Board Health, 1881-86, p. 66, 128, 192; Prashlow, Der Staat Californien, Göttingen, 1857.
- ²¹⁴ U. S. Census Reports, 1880.
- ²¹⁵ U. S. Census Reports, 1880.
- ²¹⁶ Report Board Health, 1887.
- ²¹⁷ U. S. Census Report, 1880.
- ²¹⁸ Registration Reports, 1883-84-85.

and his mother is still living. Three years ago, while at his work in the mines at Mansfield, a fall of coal caught his knee, crushing it slightly, but not severely, as he kept on at his work for a month, at which time, however, his knee began to trouble him so much he was compelled to take to his bed, which he kept for three days, when he again resumed work, but only for a short time, when he was again compelled to go to bed for a few days; and so he has alternately worked and lain in bed for the past three years, until within a short time, when he became unable to work or even to stand on his leg. Upon examination I find that the mischief has so involved the joint that the articulating surfaces, cartilages, ligaments and the joint generally, has become so thoroughly disorganized as to require a surgical operation. There are two operations we may do for this man, namely: amputation of the limb or excision of the joint. The latter is a substitute for the former, and is resorted to in disease, injury and deformity of joints; and where it is applicable the mortality following it should govern us largely in attempting it. A few years ago good surgeons had almost abandoned it, so great had been the mortality following it.

Of 57 cases recorded during the late war, 44 died, 10 recovered, and 3 are unaccounted for; but since the advent of antiseptic treatment of wounds results have changed materially. I have done five excisions in the past three years, with but one death, that of a delicate child, while my friend Prof. King has done five excisions in the same length of time with no deaths. The object in view in excision of the knee-joint is different from that in the elbow, shoulder, wrist, hip, ankle or almost any other joint. In almost every other joint, we hope to get motion after excision, in the knee we do not; in fact, we make every effort to get a stiff joint, we endeavor to destroy the joint as a joint, and to that end we fix the bones solidly together with nails, destroy the synovial pouch and membranes, and hope thereby to get strength at the expense of motion.

In doing this operation we will make an incision extending from opposite the external condyle of the femur, across the centre of the patella to opposite the internal condyle of the femur, about three-fourths of the circumference of the limb, and carry the incision deeply through all the tissues down to the ligaments; we then dissect up the skin, flex the limb and remove the patella, and all the diseased tissue surrounding the joint. After this we saw a thin piece off the end of the femur and a thin piece off the end of the tibia, taking care not to remove the entire epiphysis in any case. As the normal leg is not straight, it shall be our endeavor to remove the ends of the tibia and femur in such a line to the axis of the leg, that when the two sawed surfaces are brought into position the natural bend of the leg shall be maintained. After the nails are put in

place and the drill removed, a tap or two on the head of each nail with the mallet serves to fasten them up and to draw the two surfaces into closer apposition. In addition to the nails a posterior splint will be put on, also a plaster dressing will be put on over the whole; all of which will help hold the joint immovable. Several drainage tubes having been put in, small fenestra will be cut in the plaster dressing in order that the tubes may be removed without disturbing the limb, which will be done in about one week. The dressing will not be removed for about two weeks unless pain or rise in temperature indicate that all is not doing well. The nails will be withdrawn in about three weeks, and if all goes well this man should be able to move about on crutches in about four weeks.

October 27, 1888.

We will show you first, to-day, the man on whom we excised the knee-joint just four weeks ago. You see that he is able to walk about on crutches, and you will also notice that he looks much better, physically, than he did on the day of the operation. One week ago I removed the nails, and failed to find one drop of pus in the wound, or in the track of the nails. You also see when I manipulate the limb, that the joint is firmly ankylosed, showing that complete bony union has taken place. Now, that is just the result we sought to obtain, and it is the result we have a right to expect if our operation has been properly done, and our antiseptic precautions have been properly observed. This man has been thoroughly incapacitated for work for four years, and now he has the pleasure of knowing that he will soon be able to resume his occupation, with a considerable degree of satisfaction. He is 47 years old, an age at which we should scarcely expect as favorable results as we have been able to obtain in this case. On the evening of the day of the operation, his temperature went up to 101.6°, but since that time has remained below that, much of the time being normal.

October 13, 1888.

FRACTURE OF THE SKULL.

Through the courtesy of Dr. Hyatt we are enabled to show you the case of a young man, who one week ago sustained a severe fracture of the skull. This man is 25 years old, and works in a machine shop. One week ago, while at his work, he was struck by a falling beam, receiving, as you see, this extensive stellate fracture of the skull, just over the left parietal bone. And extensive as this wound is, and considering the fact that pieces of bone were driven down into the substance of the brain, this man walked down three flights of stairs, rode to the hospital in an ambulance, and got out and walked into the ward without for a moment losing consciousness.

This fact will serve to teach you that men may receive very extensive fractures of the skull, and still retain consciousness. After this accident, Dr. Hyatt trephined the skull, removing the detached portions of bone, and elevating the depressed portions, observing through all his manipulations strict antiseptic precautions; and to-day his chart shows a temperature of 99.6°, and at no time did it exceed 99.8°. Now, this would be almost an impossible state of affairs under any other than antiseptic treatment. Under the old forms of treatment of injuries like this, we would, in all probability, by this time have this patient in an aggravated form of septic fever.

We will now remove the dressings in order to get at the drainage tube, which has now served its purpose and will be removed. This will be done as strictly antiseptically as the original operation. The skull is an exceedingly difficult location on which to do antiseptic surgery, on account of the hair, which gets very filthy. When you want to do a clean operation on the skull always shave the hair off close to the skin. Heretofore not a little trouble has been experienced in elevating the internal table of the skull, on account of its friability and proneness to break down under instruments, but my friend Prof. Brazier, of Wooster University, has invented an instrument which overcomes this difficulty. He has promised to send me one of them, which, when he does so, will be exhibited to you. The opening left here by the trephine will not be closed by a silver or glass plate, as so many people think, but will be left to nature to close, and which she will close; not by bone, but by a thick, fibrous membrane, leaving a soft spot, which will always remain over the site of the wound. In a case of this kind, not much can be done by medication. I, however, always give a cathartic, a brisk, hydragogue cathartic, which partly takes the place of the old style of bleeding. This young man has had this.

FRACTURE OF THE PATELLA.

We have here another patient, one who has a fracture of the patella. A few days ago, while trying to board a moving train, he was thrown violently against an upright signal pole, and has sustained a transverse fracture of the patella, which is a rare occurrence. Fractures of the patella may be caused by direct violence, and by muscular action, and when it is caused by direct violence, it is almost always in an oblique, vertical or stellate fracture. When it is fractured in a transverse direction, it is almost always done by muscular action, as when a person is about to fall, or be thrown down, in his violent effort to prevent his falling, and when his knee is in a semiflexed position, his patella is fractured in a transverse direction, by the violent contractions of the strong muscles of his thigh opposed by the ligamentum patella below, much the same as you would break

a stick by pulling it over your knee with a hand on either end. But in this case you see a transverse fracture caused by direct violence. This is merely an exception to the rule. This is also a complete fracture, the parts being separated from 1½ to 2 inches, and as you see, the limb is very much swollen or puffed up by the accumulation of fluid in the joint. Now, it is very desirable that this fluid should be disposed of before we try to bring the parts together, and in order to do this, some surgeons recommend the aspirator. In this case, however, we will try milder means. First we will place a bladder filled with broken ice about the joint, and follow this with a couple of large blisters, and if this do not effect the desired result, the aspirator will then be used. Now, there are two ways of bringing the fractured ends of the patella together: first by plasters, one strip being passed around below the lower part, and strongly drawn upward and made to adhere to the skin of the thigh above the knee; another strip is passed around the upper fragment and strongly drawn down, and made to adhere below the knee. The limb must lay on its posterior aspect, and perfectly relaxed, and then, by manipulations and flexing the thigh upon the pelvis and extending the leg, the fractured ends may be brought very nearly into approximation; always remembering, however, that the upper part must be drawn down, and that the lower part cannot be drawn up, as the ligamentum patella is not elastic. The other way of reducing this fracture is to cut down on to the bone, freshen the two fractured surfaces, pass strong wires through each, draw them together, twist the wires, and so retain them in apposition until union takes place. This latter process is attended by so much danger that it is not often resorted to. Patients have lost their lives as a result of it, and many have suffered amputation. In either of these operations we can hardly hope for bony union; some surgeons claim to get bony union in favorable cases, but it has been claimed by just as good authority that bony union never takes place in these cases. The fibrous union which we do get, however, is as good for all practical purposes as bony union would be, while some claim that it is better than bony union would be, if we did get it, as the patella will never break again at the same place after fibrous union has taken place.

THE ROYAL COLLEGE OF SURGEONS AND ITS MEMBERS.—At a meeting of the Birmingham and Midland Counties Branch of the British Medical Association, the following resolution was, after an animated discussion, adopted: "That this Branch sympathizes with the desire of the Royal College of Surgeons of England to take part in the management of affairs of the College."

MEDICAL PROGRESS.

REGARDING THE RESEMBLANCE OF THE MALARIA-PARASITE TO THOSE OF FEBRIS RECURRENTS.—N. A. SACHAROFF, in a preliminary communication in *Wratsch.*, 1889, No. 1 (Russian), states that there exists in the blood of patients suffering from febris recurrens a hæmatazon which may be best observed immediately after the temperature begins to fall, and which then assumes enormous proportions (20 and more diameters of a red blood-corpuscle). But specimens of lesser size are also found. The parasite consists of a delicate amœboid body containing a multitude of dark, round, uniform, sharply-outlined movable granules. Besides these the protoplasma contains a generally grayish, homogeneous nucleus as large as one or two red blood-corpuscles. The protoplasma sends forth pseudopodia (without granules) which sometimes separate from it and appear as small, delicate pieces of protoplasma without granules. They vary in size and are often swallowed by red blood-corpuscles in which they gradually grow and finally develop into the above-mentioned large amœboid body.

In a detailed description contained in the Minutes of the Session of the Caucas. Med. Society, in Tiflis, 1888, No. 11, Sacharoff designates the large protoplasma-lumps described by Ponfik, Ref. L. Heydenreich (Wilna), as his parasite: Hæmatazon Febridis recurrens. He declares that the granules in the protoplasma which Ponfik took for granules of fat are mostly pigment, not fat. From time to time the protoplasma itself sends forth pseudopodia, in which no granules are to be found; these pseudopodia fall off and circulate freely in the blood. By separating from the protoplasma, however, the parasites become smaller, until finally only the nucleus and a narrow zone of protoplasma containing granules remains. The nucleus itself is round, delicate, grayish, also reddish, and Sacharoff thinks that it is merely a red blood-corpuscle. The nucleus sends forth pseudopodia, or buds, which separate from it and also circulate freely. Sacharoff watched such separated pseudopodia and noticed successive changes in them, *i. e.*, he saw spirochactæ-shaped threads form from nucleus-pieces within from 8 to 10 hours. They did not show any small undulations and were not very thin, but large undulations were distinctly visible. He thinks this is possibly the genesis of spirochactæ. Nor do the lumps separating from the protoplasma remain without further development. They have a motion of their own, attach themselves to red blood-corpuscles, send buds into them and finally are completely enveloped by them. Here they may assume various shapes and may grow larger and gain granules of pigment in the protoplasma.

They distend also the blood-corpuscle containing them, and seem to be able to cause its disappearance. On the other hand they can emigrate with equal facility from the blood corpuscle. Then the parasite becomes free and continues to grow, or decomposes as was shown above. Immediately after the crisis the three first-named forms exist in large numbers, further on during apyrexia principally or exclusively the intracellular forms are to be found. This is the main difference between it and the plasmodium malarial where the intracellular forms are found only during the fever.

This report is very important and it opens new points in the etiology of this disease. If the highly interesting discoveries of Sacharoff should be confirmed, we should have reliable means for the diagnosis of the disease during apyrexia as the intracellular forms, which can be stained with methyl blue (at least in intermittens), are easily seen. In uncolored specimens they are hard to see. The same peculiarity might then be utilized as a means of differential diagnosis from intermittens, with which febris recurrens is easily confounded.—*Centralblatt für Bakteriologie und Parasitenkunde*, Band v, No. 12.

SEMMOLA ON THE CURABILITY OF INTERSTITIAL HEPATITIS.—In a lecture on therapeutics at the University of Naples (*Il Progresso Medico*, January 15, 1889) PROFESSOR SEMMOLA exclaims strongly against the exaggerated importance which is attached to the anatomical basis of disease. He points out that the common error of associating the morbid anatomy found post-mortem in the last, and probably incurable, stage of disease with the symptoms of an earlier, and possibly curable, stage, as met with at the bedside, discourages therapeutic efforts, and leads directly to pessimist views.

So, in speaking of the curability of interstitial hepatitis, he does not refer to the atrophic stage, which is the one most commonly met with in the post-mortem room, and which is, as it were, the dregs of the disease; but to an earlier condition, when the liver is large, and the new tissue has not yet become hard, contracted, and fibrous.

Professor Semmola suggested the possibility of the curability of interstitial hepatitis in a lecture so far back as 1869. And at the International Medical Congress at Amsterdam in 1879, he details a series of cases in support of that view. More recently Dr. Millard has advocated the same proposition in *Le Progrès Médical*, and has published a series of cases in which he considers that interstitial hepatitis has been cured. Professor Semmola in his present lecture relates several further cases, but he appears to make no distinction between those of malarial origin and those due to syphilis or alcohol. It is quite possible that the former may be more readily curable than either of the latter.

It would also appear that sufficient account is not given to the establishment of a collateral circulation in the very numerous ways in which it is known to occur, and to the consequent disappearance of ascites and other symptoms, the interstitial hepatitis remaining unaltered. The reporter well remembers a middle-aged man who was tapped two or three times for very copious ascites, and whose liver was so hard and irregular that several of those who saw him thought he had malignant disease, but who lost his ascites completely and recovered sufficiently to resume his work as a railway navvy. It was difficult to attribute the result to anything but the establishment of a collateral circulation.

The principle of Professor Semmola's treatment is the rigid restriction to a milk diet. He argues that a more solid dietary, and especially meat, increases the hepatic irritation, and exaggerates the disease.—*London Medical Recorder*, March 20, 1889.

ON THE ORIGIN OF HOMOGENEOUS CASTS AND CYLINDROIDS IN THE URINE.—TORÖK and POL-LACK have sought to discover the origin of homogeneous casts by clinical and pathologico-anatomical observations, as well as by histological and chemical investigations, and experiments on animals. By the results thus obtained, they join the partisans of the transudation theory, according to which homogeneous casts originate from the coagulation of an albuminous substance transuded into the renal channels directly from the blood. They consider their formation from cells or from derivatives of cells as out of the question. As chief supports for their views they cite the shape of the casts and cylindroids, and the observations which prove that these formations occur in simple disturbances of circulation, when renal epithelium is wholly normal or but slightly changed. Besides, they are formed so quickly in the kidney and in the urine that a homogeneous metamorphosis of the epithelium, or the formation and blending of vacuoli, would be impossible. The origin of cylindroids is twofold: one portion originates from the kidneys, another forms extrarenally from the secretions of the prostate, of Cowper's and Littre's glands, of the mucous glands of the bladder, of the uterus and the cervix, and differ from renal cylindroids, which they resemble morphologically, only in their insolubility in acetic acid. Against the formation of cylindroids from cells or vacuoli speaks also the circumstance that they are found alongside of almost normal epithelium and never show cross-stripes (the boundary-lines of the cells and vacuoli not yet blended). Furthermore, cylindroids occur frequently in urine, whilst vacuoli are very rare in fresh urine and in the urinary channels. Casts and cylindroids form where the quantity of the transudation is sufficient to fill completely the lumen of the urinary

channels and where it is of sufficient rigidity. Experiments especially seemed to prove the opposite. The authors regard the vacuoli, which most people think secretion products from the kidney epithelium, as cells which degenerated and subsequently swelled by absorbing liquid.

The homogeneous cast-substance plays an important part also in the formation of cell and granular casts. Concerning the question how this substance transudes, the authors believe that transudation goes on not only in the glomeruli, but also in the urinary channels. They are unable to say whether the kidney epithelium takes part in the formation of homogeneous casts or not. They likewise refrain from expressing an opinion on the factors causing coagulation, and merely mention the hypotheses advanced on this point.—*Centralblatt für Klinische Medizin*, 1889, No. 12.

THE LEUCOMAINES IN THE NORMAL BLOOD.—Under this title MR. R. WURG explains the results of careful investigations made at the instigation of Mr. A. Gautier, which have had a bearing on the question of alkaloids in the normal blood. The experiments which were made on 100 litres of ox-blood have led to the following conclusions: Normal ox-blood contains, besides the well-known bases isolated long ago, creatine, xanthine, hypoxanthine, a certain number of leucomaines, fixed or volatile, in a proportion not exceeding 3 gms. in 100 litres. The greater part of these bases were isolated in quantities too small to allow of an analysis. The form of their salts and their physiological properties are characteristic for each. Only two have been analyzed: one of them, which is volatile, is methylamine; the other, for which the name of "plasmaine" has been proposed, is fixed; its formula is C_6H_5Az . The physiological action of this base is but slight, like that of most muscle leucomaines and of adenine, despite its being isomeric with hydrocyanic acid. The other bases likewise have no or but slight toxic qualities. The most poisonous among them kills a frog of average weight (15 gr.) in a dose of 2 to 3 milligrams, in about one hour. The symptoms generally observed were a slowing of the heart and of the respiration, and an increase in the sensitiveness of the muscles. In Guinea pigs no physiological effects could be observed. The elimination of these fixed bases occurs probably through the kidneys, whilst methylamine is eliminated by the lungs. Although the proportion of these leucomaines in the normal blood is very small, their presence is nevertheless of interest, in the matter of the elimination of nitrogen.—*Les Nouveaux Remèdes*, Vol. v, No. 6.

A CASE OF FATAL TETANUS DURING ENLARGEMENT OF THE STOMACH.—MR. BEURMANN has had opportunity to observe a case in which a pa-

tient died within a few hours from tetanus which extended to the respiratory muscles. This patient had been suffering for a long time with a considerable enlargement of the stomach, and had passed, a few days before, through another crisis characterized by vertigo, torpor, and a pricking sensation in the limbs. These symptoms, which introduced the fatal crisis, are very common in enlargement of the stomach, and should immediately attract the physician's attention.

Analogous cases are not rare; there are no less than fifteen known to medical science. The first one was published by Kussmaul. Of these fifteen cases eight were followed by death. This justifies the presumption that tetanus originating in the stomach is extremely dangerous. Its extreme gravity, as also its tendency to affect the respiratory muscles, prevents its being taken for common tetanus. Apropos of the latter, it ought no longer to be considered an entity, but rather as a complication which may occur under various conditions and circumstances.

As regards the pathogeny of the spasm in enlargement of the stomach, several theories have been advanced. According to Kussmaul, it is due to a concentration of the blood; according to other authors it is of reflex origin; M. Bouchard ascribes it to a self-intoxication. I favor this last view, although I have had no opportunity as yet to verify it. Mr. Hayem observed a case of enlargement of the stomach in which two successive attacks of spasms occurred. The patient died subsequently from a sort of cholera morbus. Mr. Hayem thinks it possible that the fatal cases mentioned by Beurmann resulted from a displacement of the viscera.—*La Semaine Médicale*, Vol. ix, No. 13.

ETIOLOGY AND ORIGIN OF ACUTE PERITONITIS.—PRIVAT-DOCENT A. D. PAWLOWSKI, of St. Petersburg, has made, in the laboratories of J. Rosenbach, Göttingen, and of Pasteur, Paris, a number of experiments, with the following results:

The first series of experiments with the injection of chemical substances into the peritoneum showed that the different substances (croton oil, trypsin, cold filtrates of pathogenic microbes) produce an aseptic hæmorrhagic peritonitis, with the exception of the cold filtrates of erysipelas cocci which was without reaction.

The second series with microbes showed that even large quantities of non-pathogenic microbes do not affect the peritoneum, whilst a small number of pathogenic microbes, among them the staphylococcus aureus, produces fatal acute peritonitis in rabbits, and the longer the animals lived the more evident became the purulent character of the inflammation. The bacillus pyo-cyanus, which is considered harmless by many, proved pathogenic when injected into the peritoneum.

In the third series of experiments with unfiltered, filtered and sterilized digestive secretions, it appeared that only the first produced peritonitis which is caused by especially short bacilli isolated in pure cultures.

The fourth series of experiments showed that indifferent foreign bodies which can envelop and retain microbes, as also irritated or inflamed conditions of the peritoneum favor, under the influence of chemical substances, the development of acute peritonitis.—*Internationale Klinische Rundschau*, March 17, 1889.

THERAPY OF BASEDOW'S DISEASE.—PROFESSOR EULENBURG, of Berlin, speaking on the therapy of this disease, considers it best to place patients in a sanitarium for nervous diseases. Often the most brilliant results are obtained, even in far advanced cases, in establishments and sanitariums located in high altitudes. Even the worst complications with organic heart-disease, valve troubles, incompensation, do not present an absolute contra-indication to a sojourn in high altitudes as is generally supposed. In some cases few such altitudes are not well borne, rapid circulation, difficulty in respiration, etc., ensuing. In these cases lower altitudes and sub-alpine climates are preferable.

This climatological treatment is aided by the simultaneous use of balneo-therapeutic, diatetic, and electro-therapeutic measures. Regarding the first Eulenburg recommends the lighter forms of cold-water treatment and carbonic-acid baths, and lukewarm carbonic-acid and brine baths of a short duration on the other.

As concerns the diatetic measures the Playfair or Weir-Mitchell cure, milk and kumyss cures should be used as in other neurasthenias (for as such Eulenburg regards Basedow's disease).

As to electricity, a mode of treatment especially developed by Eulenburg, hydro-electric baths are to be used. Eulenburg prefers monopolar cathode baths. With this general electrization a local application of electricity may be combined, either after the method of Romain Vigouroux, or after the method of Eulenburg, who in many recent cases tension—or rather influence—electricity, especially in the form of franklinization on the head (head douche) and the positive point current directed upon the heart. (*Berl. Klin. Wochenschrift*, No. 2 and 3, 1889.)—*Internat. Klin. Rundsch.*

ON THE INDICATIONS FOR LAPAROTOMY IN ACUTE PROCESSES.—GERSUNG, in the *Wiener Med. Presse*, 1888, No. 46, collects all those cases under the name of "acute," in which danger of a suddenly fatal termination compels the physician to decide immediately whether a laparotomy should be made, or whether other remedies are to be used which place less responsibility upon the

physician, and endeavors to decide at what moment safety can be expected only from operation, or how long it may be deferred without depriving the patient of this last possibility of a cure.

Laparotomy should be performed for injuries to large vessels or to organs of the abdominal cavity containing many blood-vessels; traumatic, or in very rare cases spontaneous rupture of liver or spleen; rupture of the foetal sac in tubular pregnancy; dangerous vomiting of blood, and perhaps also a bleeding carcinoma of the stomach. As to peritonitis laparotomy is of value chiefly as a preventive operation; in general peritonitis already existing the prospect of success is very limited.

Laparotomy is indicated whenever the abdominal cavity is opened in order to prevent septic processes, and in perforation (also traumatic) of intestines, rupture of an abscess and flow of pus into the peritoneal cavity, rupture of the bladder, impacted gall-stones, obstructions in the intestines, whether caused by invagination or valvulus, by strictures resulting from scars or new formations, by obstruction from an internal hernia, or by foreign bodies that entered into the intestinal channel from outside, or by a gall-stone remaining in the intestine, by sloughing of a portion of an intestine as a result of inflammatory processes, or by inherited malformation.—*Centralblatt für Gynäkologie*, 1889, No. 12.

SULFONAL FOR NIGHT-SWEATS.—Although the number of remedies recommended for night-sweats is very large, it may not be amiss to give some information regarding a new cure: Sulfonal, the soporific recently so warmly recommended. Bättrich's attention was first attracted to the subject by the case of a lady 80 years old, to whom he had administered only $\frac{1}{4}$ gram as a soporific. The lady had been suffering with night sweats so profuse that her clothes were changed twice every night. After taking this powder, she asked him whether he had mixed anything for those sweats in it. Further experiments showed that in most cases night-sweats could be prevented by $\frac{1}{2}$ gm. of sulfonal. He considered the effect of sulfonal to that of atropin, but it is wholly free from unfavorable side-effects. Moreover its effect is lasting, the sweats of the second night being much less profuse without sulfonal.—*Therapeutische Monatshefte*, March, 1889.

PICROTOXIN, AN ANTIDOTE OF MORPHIUM.—PROFESSOR ARPÁD BÓKAI, of Klausenburg, considers picrotoxin the most rational antidote for morphia. The two substances act in opposite ways upon the respiration-centre of the medulla oblongata, morphia paralyzing it whilst picrotoxin increases its activity. In cases of poisoning by morphia, picrotoxin is actually life-preserving, as it checks the paralysis of respiration

and prevents the decrease of the blood-pressure by strong irritation of the vasomotor centre, producing vascular contraction. The opposite effects of the two substances upon the cerebrum is of no importance in poisoning. It must be remembered that the only antidote for morphia known so far—atropin—cannot be given in large doses. Bókai is of the opinion that picrotoxin could be used also as a prophylactic in chloroform-narcosis, to prevent asphyxiation. He promises further reports on the subject.—*Therapeutische Monatshefte*, March, 1889.

REGARDING A NEW BLOOD TEST IN COAL-GAS POISONING.—K. KATAGAMA says this test consists of the addition to blood containing coal-gas of orange-colored ammonium sulphide and acetic acid, which produces a beautiful light-red color, whilst normal blood turns greenish-gray or reddish or greenish-gray. The test may be best made as follows: Dilute 1 ccm. of the blood to be tested with 50 ccm. of water, pour 10 ccm. of this into a test-tube, and add first 0.2 ccm. of orange-colored ammonium sulphide and 0.2-0.3 ccm. of 30 per cent. acetic acid, and turn the test-tube upside down two or three times. Blood impregnated with illuminating gas diluted from 1:5 to 1:7 showed distinctly the characteristic color with the test reagents, whilst the spectroscope proved ineffective with a dilution of 1:4, and Hoppe-Seyler's soda test with a dilution of 1:5.—*Centralblatt für Klinische Medizin*, 1889, No. 12.

CAMPHORATED NAPHTHOL.—This mixture is composed of one part of naphthol and two parts of camphor, triturated together *dry*. Désesquelles discovered that naphthol liquefies in camphor, and M. Bouchard has shown the considerable antiseptic power of naphthol, and its great advantage of being non-toxic. He advises the use of camphorated naphthol as a topical antiseptic, having used it with success in many cases of excoriations, wounds, and ulcerations, and in diphtheria as an application to the throat.—*Journal de Médecine de Paris*, No. 7, 1889.

PERNICIOUS VOMITING WITH AND WITHOUT PREGNANCY.—DR. LEVY, in a treatise published by Heuser, Berlin, describes in detail a case of continual vomiting during pregnancy, and reviews a number of other authors on the ætiology and therapeutics of the subject. In the case mentioned the vomiting was a result of anæmia of the brain and ceased after proper treatment of the latter trouble. Another patient was not pregnant; the vomiting originated in a uterine disease, and ceased after the latter was cured.—*Correspondenz-Blatt für Schweizer Aerzte*, March 15, 1889.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the Treasurer, Richard J. Duglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, APRIL 27, 1889.

LEGISLATIVE BODIES AND SCHOOLS OF
MEDICINE.

The various Bills or propositions brought before the Legislatures of many of the States, intended for regulating the practice of medicine, form a curious variety and strikingly illustrate the vagaries that still possess the popular mind concerning the nature and extent of medical science and art. A large part of these vagaries arise from the erroneous use of the phrase "Schools of Medicine," and the remainder originate from the confusion of ideas about personal rights. In past centuries, before the natural sciences had been developed into well-defined departments of science founded on carefully observed facts, analyzed and classified; before chemistry had enabled its votaries to resolve almost all bodies into their elementary constituents and determine the relations of each to every other; and before the scalpel of the anatomist had separated the various structures of the human body from each other and enabled the physiologist to study the relations and uses of every part, human knowledge consisted in part of empirical rules concerning the affairs of everyday life and labor, and in much greater part of fanciful theories and speculative dogmas under the name of *philosophy*. In those times each master mind with more boldness and skill in inventing hypotheses and plausible theories than the common mass, drew around him admiring followers, and he became the founder of a sect or so-called school of philosophy. Hence history informs us of the Schools of Aristotle, of Plato,

etc., with their parallels in medicine, as the School of Hippocrates, of Galen, of Cullen, of Boerhaave, of Darwin and Brown; or the School of the humoralists and the School of the solidists. It was thus that the phrases, Schools of Philosophy and Schools of Medicine, used to designate the theoretical dogmas of some bold and skilful leader of human thought, became incorporated into all departments of literature and have been handed down to our time. But with the development of chemistry, organic and inorganic, analyzing and recombining all the materials within human reach, came also the discovery and application of physical laws and forces to the advancement of all the arts and industries of man. Of necessity, the observation, collation and classification of facts, aided by experiments, rapidly superseded and rendered obsolete the dreams and speculative dogmas that had constituted the "Schools of Philosophy" of the past ages, and gave instead our present scientific knowledge of the vegetable and animal kingdoms of nature, and of the inorganic matter with the laws and forces that govern it, under the comprehensive word physics. Under the same influences and in the same parallels of time medicine underwent the same changes. The practical study of human anatomy, the analytical study of all its parts, the discovery of the circulation of the blood, the complex functions of the nervous system, the chemical changes in digestion, assimilation and nutrition, and the counter-changes in disintegration and elimination, soon rendered every previous so-called "School of Medicine" obsolete, by giving us in their place the well developed sciences of anatomy, physiology, and organic chemistry. A knowledge of these branches quickly compelled the recognition of the fact that diseases or morbid actions were only deviations in some direction from the natural functions or structures, and hence the sciences of pathology and therapeutics followed, and with them, *pari passu*, the arts of surgery, practical medicine, and hygiene or sanitation, became as truly departments of science as are physics, botany, natural history and geology. Therefore it is as absurd, at this day, to designate the aggregate branches of medicine as a "School of Medicine," as it is to speak of a School of Mathematics or a School of Natural History. And yet newspaper writers, members of legislative bodies, and even many members of the profession and prominent medical journalists,

continue to speak and write of the "regular School of Medicine" on the same plane as the little bundle of fanciful dogmas they call the Homœopathic School, the Eclectic School, the Christian Science School, the Electro-physio-pathic School, etc.; and it is very rare that any form of law having any bearing on the education or practice of medical men, or on the protection of the public health, is proposed in one of our State legislative bodies that is not marred by some recognition of the various so-called Schools of Medicine.

As examples, a Bill was recently introduced into the Legislature of Pennsylvania providing for the appointment of a State Board of Medical Examiners by the Governor, subject to the approval of the Senate, making no mention of Schools of Medicine in any way, thereby leaving the appointing power untrammelled. But it was speedily so amended that no one school of medicine could have a majority in the Board. So in the Michigan Legislature an Act is pending for a State Board to be composed of two members from the regular, the homœopathic and the eclectic schools of medicine.

Has not the time come when the members of the medical profession should cease to call themselves a "School of Medicine;" and refuse to respond to such designation when used by others? Legislative bodies have the right to *protect* the *people* by enacting such laws as will require every person proposing to practice medicine and surgery to possess a good knowledge of medical science and art, but with medical sects and theories they have properly nothing to do.

MICROBES IN HEALTHY FEMALE ORGANS OF GENERATION.

The presence of various microorganisms in the vagina when in an apparently healthy condition has been noted by several observers. Recently, DR. G. WINTER has been prosecuting a more systematic and extensive investigation, regarding the presence or absence of these bodies in all parts of the female sexual organs when in good health.¹ In the vagina, a variety of microbes were always present, and in considerable numbers. In the os and cervical canal he found a similar variety generally present but not always. He found their number much increased during preg-

nancy. But he states positively that he found no microorganisms of any kind, either in the cavity of the uterus or in the Fallopian tubes. According to Dr. Winter's observations the most numerous variety of microbes present in the healthy vagina and cervical canal, is the staphylococcus, identical with the pathogenous cocci. If his observations on this point are correct, it affords additional evidence that pathogenic germs are harmless so long as they are in contact with naught but healthy living tissues, and become actively disease-producing only when in contact with degenerate or necrotic structure or the products of the same. Again, if these pathogenic germs are always present in the vagina and cervical canal, and increase during pregnancy, it only requires the presence of disintegrating blood or placental débris in the lochial discharge, or even the presence of an atmosphere containing an excess of albuminoid ammonia, to furnish the microbic papulum needed for bringing the puerperal infection into its usual destructive activity. And inasmuch as the lochial discharge always contains more or less blood for several days after confinement, it would seem that every case of labor leaves the woman with all the elements necessary for a possible puerperal infection, present, without reference to what might be communicated by the physician, midwife or nurse. Possibly, however, Dr. Winter may be mistaken in the opinion that the microbes he found in healthy genital tracts were really pathogenic; and other observers may be more fortunate in finding some healthy vaginas free from microbes.

THE MEETING AT NEWPORT.

The Fortieth Annual Meeting of the Association, which is to convene at Newport, R. I., on the 25th of June, promises to be one of unusual interest. The preliminary programme is published in THE JOURNAL, under date of April 13th. It shows that the Committee of Arrangements already has its work well in hand. From the known efficiency of this Committee we are confident that every reasonable effort will be made to render the meeting in all respects a notable success.

We are happy to state also that the officers in the various Sections are actively engaged in securing such papers for presentation as shall command

¹ Zeitschrift für Geburtshilfe und Gynäkologie.

the interest of those who attend, and elicit such discussions as time will permit. This is well. The best thought of the profession should be represented there—and those who make sacrifices for the purpose of attending should be amply repaid for the effort.

The assembling of prominent medical men from all sections of our country is pleasurable and profitable. The social gatherings of the profession at these annual meetings are always delightful. But we wish to emphasize the fact that the Association has a vastly more important mission to fulfill than that of simply bringing medical men together for mere social enjoyments.

Its value to the profession and to the people of this commonwealth lies not in its power for the culture of social amenities—pleasurable as that may be—but in the value of the work done, in the several Sections while the Association is in session. Its real mission is, and must be, the promotion of medical progress and the advancement of the healing art. To this end the papers there presented should represent the best efforts of our ablest men, and the same order of talent and culture should be enlisted in their discussion. To this end special care should be had in the selection of the officers of the Sections. And these officers when they accept their responsible positions should do their work so wisely and so well that the programmes when presented to the profession should possess the power to draw all interested men unto them. This manifest need for the future welfare of the Association, we believe, will be largely met at Newport.

RUPTURE OF THE INTESTINE.

At the regular meeting of the Chicago Medical Society, April 15, 1889, DR. J. J. ALDERSON presented a section of the small intestine that had been ruptured under the following circumstances. The patient from whom it had been taken was an adult laboring man, wearing a truss for the support of an inguinal hernia. While engaged in some work a loop of intestine was forced out by the pad of the truss. He succeeded in returning it back into the abdominal cavity, but it was immediately followed by acute pain and the rapid development of all the symptoms of peritonitis, terminating early in death. The post-mortem examination revealed much serous fluid freely

mixed with fecal matter in the peritoneal cavity, extensive peritonitis with some patches of plastic lymph or pseudo membrane, and a liberal opening through the coats of the section of small intestine exhibited to the Society. Dr. Alderson stated that he had been unable to find any case on record of an intestinal rupture under similar circumstances, and thought the accident one of very rare occurrence.

EDITORIAL NOTES.

SUNSTROKE EARLY IN THE SEASON.—At Pittsburgh, Pa., on April 19, 1889, the temperature was reported to have reached 82° F., and John Jenkins, a steel worker, and an unknown man on Smithfield street, were stricken down with "sunstroke."

DR. W. F. WILSON, a specialist in the department of ophthalmology, practicing in Denver, Col., died on April 19, 1889, from an overdose of morphine to produce sleep. He had been troubled with insomnia, and was only 29 years of age at the time of his death.

SOCIETY PROCEEDINGS.

Gynæcological Society of Boston.

199th Regular Meeting, February 14, 1889.

THE PRESIDENT, W. SYMINGTON BROWN, M.D.,
IN THE CHAIR.

The report of the Treasurer for 1888, showing a balance of \$404.59, was read and accepted.

PATHOLOGICAL SPECIMENS.

DR. A. L. NORRIS exhibited a placenta with an unusually short funis (nine and a half inches). The patient, Mrs. J. D., married, has a distorted pelvis and has always been delivered with much difficulty by forceps and ether. She has been delivered by me of living children as follows:

February 2, 1887, a male child, weighing 10½ pounds.

February 20, 1888, a female child, weighing 9 pounds.

February 14, 1889, a female child, weighing 9 pounds.

Thus, in the interval of two years and twelve days, have I delivered this patient at term of three living children.

DR. J. COLLINS WARREN, by invitation, read a paper on

THE DIAGNOSIS AND TREATMENT OF CANCER OF THE BREAST,

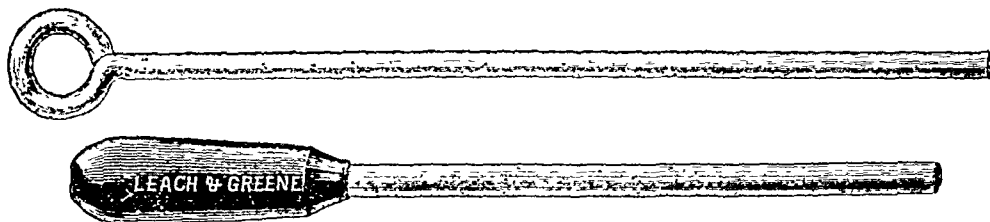
to which the Society listened with marked attention and interest. Dr. Warren alluded to the great changes which have recently taken place in the treatment of this formidable disease, investing it with a new interest to the surgeon. Whereas the old operation contemplated a removal of the mammary gland, with a portion of the integument and a shelling out of the glands in the axilla when enlarged; the methods advocated in England, Germany, and this country now, contemplate a removal of the gland and its coverings; the fascia of the pectoralis muscle and a complete dissection of the fat and glands from the axilla and the lower margin of the pectoralis, and it is known as the "completed operation."

This operation has recently been objected to by able surgeons, and indeed, all operative interference has been thought useless, since it is claimed that life is as long in the average of a large number of cases not operated upon, as in those which have been subjected to operation. Moreover, the complete operation has been said to increase the mortality 50 per cent.

The reader dwelt on the importance, in the first place, of an early diagnosis particularly in

Dr. Warren then gave some statistics bearing upon the mortality of the completed operation, and stated that he had had thirty-one consecutive cases without a death. Gross gives fifty-three cases of his own and his colleagues with two deaths. It is fair to assume that the antiseptic methods are daily becoming more familiar to the average surgeon, and are constantly being improved upon; and in the light of recent experience, it is not too much to hope that a mortality of only 3 per cent. could be obtained. Dr. Warren was unable to give an account of all his cases; but he quoted examples taken from his tables showing an immunity of three years and a half after operation; of four years and of four years and a half without recurrence at the present time. He is in favor of a dissection of the axilla even in cases where there are no glands to be felt; for in one of the cases quoted, glands were found in the pyramidal mass of fat removed from the axilla. He thinks that it is probable that when the statistics of the next few years are rolled up and counted, we shall find that surgery has succeeded in accomplishing a cure in 20 per cent. of the cases.

DR. J. F. FRISBIE: Does Dr. Warren believe the case of Mrs. P. to which he referred, was the result of the blow on the breast?



those doubtful cases which are those usually submitted to the surgeon for a decisive opinion. He showed an instrument, devised by Dr. S. J. Mixter for removing powder grains from the skin, which he had adapted to this purpose. It consists of a canula with a sharp edge which can be bored into the new growth, and, by withdrawing a short distance and then advancing in a slightly different direction, a cylindrical mass is cut off, which can be removed in the canula. In this way good sized sections can be procured, by which a satisfactory microscopic examination can be made, and the nature of the growth determined.

This can be done in the doctor's office with the aid of a subcutaneous injection of cocaine. A small puncture through the skin with a narrow bistoury facilitates the introduction of the instrument. Antiseptic precautions prevent subsequent inflammation, and no trouble had occurred in any of the cases operated upon by him in this way. This is an old method which had been abandoned, but can now be revived and made practical by the advantages offered by antiseptics and improved microscopical technic.

DR. WARREN: I am inclined to the opinion that the blow was the cause of the cancer which developed in her breast.

DR. FRISBIE: Then you believe cancer may follow injury as a result of that injury alone?

DR. WARREN: Yes. There are cases where no other reason can be given.

DR. JOHN C. IRISH: I have been much interested in the instructive and practical paper that has just been presented. The ingenious device, by which Dr. Warren secures a portion of the morbid growth for microscopical examination, is very valuable; for it will give great aid in the early diagnosis of tumors of the breast, that is, as to their malignant or non-malignant character. With women of middle or advanced age, every solid growth in the breast is so liable to contain cancerous elements or to acquire them, even if it is benign at first, that my rule of action is, to advise their immediate removal. If the disease is malignant, its early removal is of unquestioned advantage; if benign, this treatment by excision is not inappropriate. One very important matter that Dr. Warren presents to us for discussion is the question, Whether in all cases of extirpation

of the breast for cancer or supposed cancer, we should make the completed operation, so-called, which consists of as thorough a removal as possible of all the fat and glands in the axillary space? Whenever the latter are appreciably affected, there can be no question as to the necessity of the completed operation. But when there is no apparent disease in the axilla, is there sufficient reason for converting a simple surgical operation into a severe and formidable one? I believe not, for the following reasons:

First. In a large proportion of cases the completed operation will permanently cripple the corresponding arm and hand, that is, the patient to a greater or less degree is forever incapacitated, from performing work.

Secondly. Since it is impossible to remove all the glands of the axilla by an operation that is continued only a reasonable length of time, we have left a nidus for the reappearance of the cancer; and I do not see any reason why a portion of the glands may not afford just as good a one as the whole of them. Therefore, we would logically infer that the completed operation must be a failure in its attempt to prevent or even retard a recurrence of the disease.

Thirdly. The cases of permanent recovery that have followed excision of the breast have been examples of the incomplete operation for the most part. None of these cases could have done better if they had had the completed operation, and most of them would have done much worse; for most of them would have been permanently crippled instead of completely cured.

Dr. Hodges, last fall, published in the *Boston Medical and Surgical Journal*, an article in which he gave the statistics of a large number of excisions of the breast alone, (that is, in which the incompleting operation was made) and in which the cancerous disease afterwards reappeared either in the scar or elsewhere. Among these cases the secondary malignant growths recurred first in the axilla in only 3 per cent. Now, if these statistics of Dr. Hodges are reliable, and no one, so far as I know, has questioned their correctness, in one hundred cases of excision of the breast alone, the cancer will return in only three cases in the axilla first. Now, are we justified in submitting these one hundred cases to that formidable surgical procedure, "the completed operation," instead of the simple excision of the breast, when by so doing we shall kill ten of them, and harm or cripple many of the remainder, when we have only the hope of curing or benefiting three? Could a surgical operation with weaker legs to stand upon, logically speaking, be proposed?

DR. A. P. CLARKE said that he had for a long time held to the view that cancer is a local instead of a constitutional disease, and since accepting that view he had been accustomed to advise that an operation for the removal of a cancerous breast

be done with the least possible delay. By means of the microscope an early diagnosis can be made, and much valuable time saved instead of being lost, as it formerly was, when it was deemed necessary to wait until the disease had become so well pronounced that but little hope for recovery after an operation had been decided upon, could be entertained.

He was much pleased with the little instrument, devised by Dr. Mixter and shown by Dr. Warren, for the removal of a small section of the growth, before its excision, for purposes of microscopic examination. He agreed with the reader that all the affected glands in the axilla and vicinity should be removed, however, extended the incision has to be carried in order to accomplish this. This method he had followed in his own practice for some years, and he well remembers having been called to assist Dr. Marcy in his first case about twenty years ago. At that time the method of removing the affected glands of the axilla was hardly known or practiced in this country; but the results obtained by Dr. Marcy, as well as by the speaker, showed that quite a large number of the cases operated upon, made a permanent recovery. In regard to the impairment of the arm occasionally resulting, as has been mentioned, this should not be regarded as an objection to the operation, as those results occurred in the earlier cases when the glands were removed, and subsequent experience has taught us how to preserve more of the nerve branches that pass through the axillary space and to the arm, injury to which caused the untoward result. There is another class of cases that sometimes occurs, not mentioned by the reader, in which, after operation for removal of a cancerous breast and affected glands of the axilla, though there is no recurrence of the disease at the former site of the operation, there is a development of cancerous disease at a distant part or in a neighboring organ. In one case occurring in Dr. Clarke's practice, that of Mrs. L., æt. 45 years, he removed on November 19, 1880, the left breast and affected glands of the axilla on account of cancer. The patient recovered, and enjoyed good health for five years, when she began to show signs of cancerous cachexia. After much severe suffering, she died November 18, 1886. The autopsy showed there were extensive deposits of cancerous matter in the liver. The disease appeared in the form of whitish spots of circular shape and of various sizes. These spots also, at first view, had the appearance of ulcers, but on closer inspection, were found to be firm and smooth, and each was depressed slightly in the centre. On section, they were noticed to be hard or schirrous, and yellowish in appearance. Some of the deposits were much harder than others, having the appearance of age, while others were of quite recent date. Some were an

inch in diameter; others of the size of millet seeds. The right kidney contained a few recent deposits similar to those in the liver. There was no appearance whatever of any return of the disease at the original site. The question that is of interest is, was the occurrence of the disease in the liver due to infection derived from the breast before the operation? The extreme hardness of some of the cancerous deposits indicated great age. The speaker believed that if he had been called at an earlier date to excise the breast, the patient would have escaped further infection. Other cases of a somewhat similar history the speaker had seen, but they tended to show that cancer of the breast is a local, instead of a constitutional disease, and therefore, we are justified in resorting to excision of the cancerous breast at the earliest possible date. He would like to hear Dr. Warren's explanation of the secondary deposits in the liver.

DR. WARREN: Secondary deposits in the liver may come about by possible extension of the original disease into the substance of the pectoralis muscle; thence it may go to the thorax, and then we may have a cancerous pleurisy. If an internal depot is once established, a new metastasis in different directions may occur.

DR. F. L. BURT remarked that the difference of opinion of authorities has its influence on other men who are not authorities. Both the time and extent of the operation are of importance. Dr. B. has seen recurrence of the cancer on the line of the cicatrix. He believes that the majority of cases which need any operation require the completed operation. The *American System of Gynecology* has an article by Dr. Gross in which there are pictured wounds, both open and closed. Possibly this makes no difference in the recurrence. He has seen some operations where a great amount of skin was removed, but the wound was closed and the patients went home in three weeks. Of thirty-five cases, the later ones went home in eighteen days, and the healing was by first intention, which is very different compared with several months when the wound is left open. He has seen two cases of recurrence. One recurred in a year and a half, and the other recurred in four weeks in the skin.

DR. MARY E. BATES asked Dr. Warren if, on general principles, he would remove a growth the size of a hen's egg?

DR. WARREN: Some growths of that size have been found to be cystic on exploration, and the fluid ran out through the canula and all then collapsed. It is a good rule to use the exploring canula in doubtful cases.

DR. S. J. MIXTER: The punch spoken of by Dr. Warren was devised by me to fill a want Dr. Warren noticed and had mentioned to me, namely: something that should take the place, in solid tumors, of the aspirator in tumors with fluid con-

tents. Instruments were long ago invented for tearing shreds of tissue from tumors and organs situated beneath the surface of the body, the best form being a very small pair of forceps that could be introduced through a trocar, canula or aspirator needle. These, however, gave but small shreds, which were not large enough for sections, and were unsatisfactory for examination in every way. The instrument shown is simply a steel tube, which may be of any convenient size, fitted with a cylindrical needle and sharpened at the end by being bevelled from the inside, the edge being at right angles to the axis of the tube. By making a puncture through the skin with a tenotome and introducing the punch through the opening, it is made to cut its way as far as necessary by rotation with slight pressure. The tube is then withdrawn about a quarter of an inch, the point turned to one side, and again advanced and rotated, thus cutting off the lower end of the cylinder. The finger being placed over the upper end of the tube, it is then withdrawn, when the piece of tissue is pushed out of the tube by a plunger. In this manner any solid tumor that could safely be reached by the aspirating needle can be examined. The pain of the operation is slight, and may be relieved by a deep injection of cocaine. I have examined in this manner tumors of the breast, tongue, face, antrum, uterus, deep-seated tumors of the neck, etc.

It has been stated that dissection of the axilla is not called for, as it cannot be complete in any case, as the region above and behind the axillary vessels and nerves cannot be reached. Of course, when the disease extends from the axilla in every direction, as in advanced cases, a thorough dissection cannot be made. But I have found by injection of the lymphatics from the breast, that the course of the vessels and chain of glands is over the edge of the pectoralis major close to the muscle, and then toward the apex of the axilla, *below and in front of the vessels and nerves*. Unless the disease in the axilla is far advanced, we find no glands above them. As another objection to the completed operation, it has been stated that the arm must necessarily be disabled. By observing the rule laid down by Küster that the subscapular nerves be saved, and by preventing the gluing of the arm to the side by the cicatrix, these difficulties may be overcome. By careful dissection the nerves may easily be saved, and by stitching the skin high up in the axilla by a quilted suture to one of the upper serrations of the serratus magnus, in the manner that I have described elsewhere, there need be no cicatricial contraction. By making the incision so that the line of suture of the breast wound is vertical, and prolonging this incision, not along the middle of the axilla, but *above* the axilla high up on the pectoralis muscle, the final line of sutures, when the arm is at the side, is in full view in front. By the use

of this method in a considerable number of cases, I have been able to give a useful arm, and one that could be easily raised above the head, even in cases where it has been necessary to remove a large part of the pectoralis major, and where a large surface was left to heal by granulation.

DR. HENRY O. MARCY stated that he had listened to the paper of Dr. Warren with exceptional interest, not alone on account of its scientific merit and practical instruction, but because it marked a departure almost revolutionary from the teaching which had dominated the surgical thought of Boston, particularly as representative of the views emanating from the Massachusetts General Hospital.

Twenty years ago it had been his good fortune to be the pupil of the late Dr. Bennett, of Edinburgh, who strongly held to the opinion that cancer was first a local and not a constitutional disease. Convinced of the correctness of these views, Dr. Marcy proceeded at once to put into practical execution the legitimate deduction, that if cancer is a local disease its treatment should be prompt and thorough as possible in its eradication to be effective. This led him very early to the careful dissection of the axillary glands and all suspicious and superfluous fatty tissue, and it has been his custom in all cases to dissect carefully the axillary space. Although it cannot be doubted that such radical measures add materially to the gravity and difficulty of the operation, especially as done before the days of carefully applied aseptic surgery, in his own experience he recalled but two cases during all these years where the operation had resulted fatally. This good result, however, he ascribed in large measure to his early adoption of Listerism, and its application in all its painstaking details. He recalled one of his first cases, operated on in 1871, where he removed a cancerous mammary gland of the right side from a young, fleshy, and otherwise healthy woman. This was not alone true cancer as judged by himself, but the opinion was confirmed by Dr. Fitz, since Professor of Pathology. In the primary operation the axilla bore no evidence of disease and therefore was not opened. Three months later, however, the axillary space was filled with a mass of enlarged glands, which he dissected out very thoroughly, quite after the manner described by Dr. Warren. He had the satisfaction a few months since of examining this patient. She has remained in good health without the slightest impairment or discomfort in the use of the arm. More than ten years since Dr. Marcy sent a poor woman, a coatmaker, to the Massachusetts General Hospital, for the removal of cancer of the right breast, where the glands of the axilla were also affected. She was refused admission, because of the advanced stage of the disease rendering, in the judgment of the surgeons in charge, the operation ill-advised. Assisted by

his friend Dr. T. H. Burchard, of New York City, at that time his guest, they made the dissection complete. Although he has twice since removed recurrent glands, when seen quite recently she was still earning a livelihood with her needle. At the Hospital Dr. Marcy recently removed recurrent cancerous glands from a patient from whom he had removed a cancerous breast six years ago. In the primary operation he was assisted by Dr. W. H. Baker. During these years she had had no discomfort. Although these illustrative cases are the exception, they stand for a class of accepted cures and teach the advantage of early radical treatment. Dr. Marcy was assured that Dr. Warren had given expression to the opinions of a large class of modern surgeons, which views he was glad to believe would early be accepted by both physician and patient as a decided advance in the surgical treatment of this most dread disease. He heartily congratulated Dr. Warren upon his distinctive satisfactory results.

DR. G. W. JONES asked Dr. Warren if it is dangerous to leave any fat.

DR. WARREN: The cases differ. Some are seen with little or no fat, and sometimes there are layers of fat and tissue. This it is important to remove as much as possible. Dr. Warren referred to a case of cancer of the tongue, that had been on the iodide of potash treatment for syphilis and did not get well. With the canula the diagnosis of cancer was made, and the operation was performed immediately. In abdominal tumors, Dr. W. has used the largest-sized aspirating needle with suction for the purpose of exploration. In a case of kidney disease we generally get only blood, but if the material in the needle is carefully examined with the microscope enough tissue may be found for a diagnosis.

DR. S. N. NELSON testified to the advantage to both patient and surgeon from the possibility of accurate diagnosis of new growths before operation. Formerly it was necessary to wait until after removal before the specimen could be examined by an expert and the verdict rendered. In the sister profession an attempt is made to determine the *necessity* for punishment before it is inflicted. Should not we do the same? The ingenious instrument invented by Dr. Mixter opens a new era, rendering this possible. By the use of this simple device we are enabled to procure our specimen before operation and without injury to the patient, and subsequent procedure can be determined upon at leisure. This, it seems to me, is the greatest gain to the patient in the possibility of obtaining proper treatment. This gain may well be compared to the advantage which the higher powers of the microscope give us over the examination of the gross specimen; for it enables us to utilize these high powers at the time when their testimony is most needed.

Dr. Nelson himself has been accustomed to

make microscopic examinations of the cervix uteri in suspected cases, after etherization of the patient. A small piece is readily snipped off with the scissors. It is put at once upon the freezing microtome and sections are made, which, stained in alum carmine, render possible an opinion, if not a positive diagnosis, in five minutes from the time of procuring the bit of tissue, the patient continuing in the state of anæsthesia; and then the necessary operation is at once performed. If however, the expert with his laboratory facilities cannot be present at the operation, or if more time is desired for making the diagnosis, the small bit of cervical tissue can be obtained with the aid of cocaine, and, after diagnosis, the operation can be performed subsequently under ether. But I think a better specimen can be obtained for examination by Dr. Mixter's device than by the scissors, even where it is possible to use them. A great advantage in Dr. Mixter's instrument, as it seems to me, and one not mentioned by any of the speakers, is that by its use there is obtained a specimen which may be a sample of the whole new growth, even including normal healthy tissue. Thus we get not only the centre, where the pathological changes are the greatest, but also toward the edges where they are less marked, and even the advancing borders themselves; and thus the invasion of the healthy tissue can be studied. Of this every microscopist knows the advantage.

In illustrating the use of the instrument, Dr. Warren had brought a breast which he had amputated that morning, in which the diagnosis of cancer had been established by its aid. The site of entrance of the canula a few days previously showed as a small red spot. The cylindrical specimen removed was about $1\frac{1}{4}$ inches long and $\frac{1}{8}$ inch thick. One-half of it divided longitudinally was exhibited. From the other half sections had been cut both longitudinally and transversely, and these, with others, were exhibited by

DR. WM. F. WHITNEY, who called attention to them, as showing what good topographical sections could be obtained from these exploratory punchings. In view of the more extended operation now performed in cases of malignant disease, he said it was now more than ever essential that the surgeon should know exactly the nature of the growth with which he had to deal. And with the aid of the instrument shown by Dr. Warren he was able to judge what he would be called upon to do before he touched his knife.

ELECTRICITY FOR ASCERTAINING THE TRUE NORTH.—The *Electrician* reports a rumor from Berlin to the effect that a means has been discovered of using electricity for ascertaining the true north, instead of the magnetic needle; that in short, the new means will be superior to the compass and is likely to supersede it.

Obstetrical Society of Philadelphia.

Thursday, March 7, 1889.

THEOPHILUS PARVIN, M.D., IN THE CHAIR.

DR. J. M. DA COSTA reported a

DOUBLE UTERUS AND VAGINA.

Uterus normal in length, with thin walls and anteflexed; otherwise well shaped, but with septum of from $\frac{1}{8}$ to $\frac{1}{2}$ inch thick, running from the tincæ to fundus, dividing it into two equal parts. Both sides of uterus were open, and a sound could be easily introduced into either side. Septum perfect in its entire length.

Vagina on first inspection appeared like a single one, but closer examination showed a septum reaching from the vulva to within less than $\frac{1}{2}$ inch of the uterus, attached to and tying together the front and back walls of the vagina. Septum was thick and fleshy near vulva, thin near uterus. Opening on left side of vagina was good but small; that on right side not to be seen at first, but could be found by hooking the finger around the cervical end of septum and working it down, when the end could be seen at the vulvar opening. Septum was cut and raw edges stitched together. Before operation the septum was about $2\frac{3}{4}$ inches long; after cutting and suturing the parts contracted to about $1\frac{3}{4}$ inch long, and the vagina, which before operating would with difficulty admit the very smallest speculum, bore easily the largest-sized "Neugebauer" blades. March 6. The severe pelvic pains she continually suffered from have all disappeared. Menses formerly were a mere discoloration, lasting twelve to twenty-four hours; she is to-day just over a good full menstruation, which lasted over four days.

DR. J. M. BALDY read a paper entitled

COMPLICATIONS FOLLOWING ABDOMINAL SECTION.

The attention of surgeons, in the past and at present, has so commonly and almost exclusively been called to the perfection of the different abdominal operations, that sight is lost of the possible complications which may follow; or if noticed at all, they are kept locked up in the bosom of the individual himself, and the profession at large hears and consequently knows very little about these annoying, and at times serious results. In consequence of this, medical men are continually running across these patients and are having their faith in the value of the original operation shaken. Most men go into an operating room, see the operation, have a pathological specimen shown them, and then go away, satisfied as to the justifiability of the operation and confident as to the results. They may or they may not see the patient several times during the treatment, but are generally satisfied with an inquiry as to how the patient is progressing, and finally have the satisfaction of

hearing that she is well and has been discharged. The case is probably reported as cured in some society or medical journal, and thus the favorable statistics are swelled, and inexperienced and untrained men are led into attempting the operation, usually with the result of sacrificing several lives before they are frightened off.

It is about time for surgeons to look at and seriously study some of the dark sides of abdominal surgery; for a dark side it certainly has. Our results, as far as removing disease is concerned, are about perfected; let us now turn some of our energies into preventing or alleviating some of the after complications which are in many cases as bad as the original disease itself; probably not causing such immediate danger to life, but producing symptoms just as hard to bear, as far as the patient is concerned, and practically, to her belief, fully as bad, at times, as her former trouble.

When I first began to turn my attention particularly to gynecological surgery, especially the abdominal variety, I was considerably worried that my cases did not always run as smooth and uncomplicated a course as I had been led to believe those in the hands of my friends and others did. That they were not perfectly well when they got up, and came to me sometimes for weeks, complaining of one thing or another, was a source of great mortification to myself. And finally I began to find that troubles continued and others appeared which it was extremely difficult to control. At first, supposing that I was the only one so afflicted, I thought there must be something radically wrong, either with my operations or with my handling of the case afterward; and yet I could not reconcile these thoughts with the fact that I usually had the very best of assistance at the operation, and the constant advice of most competent men in the conduct of the after-treatment. Now I am constantly seeing and hearing of cases with similar troubles as my own, and some with complications I have never personally met with. These cases are by no means confined to the practice of any one man or any class of men, but represent patients of nearly every prominent operator in this city. Nor do I think that these results are confined to Philadelphia, but will be found wherever abdominal surgery is practiced.

To fully consider the causes, prevention and cure of these complications, is beyond the scope of this paper; my object being simply to call general attention to the prevalence of their existence and to make a few remarks on the most frequent of them. Some of the subjects have been, from time to time, noted by other surgeons, and have been called to the attention of the profession, only to be dropped almost as if they were subjects not to be handled and publicly discussed. Among the most frequent of these might be mentioned hernias; simple fistula tracts; fecal fistulas; pain, pelvic or abdominal; œdema of the lower extrem-

ities. I have seen many patients suffering from all of these troubles, and have had some of them follow in my own practice.

Holmes has found that he had 30 per cent. of hernias following his operations. Now, as these cases were for the most part hospital patients, he could certainly not have kept track of them all, and so, if the whole truth were known, the per cent. would be much higher. It would seem, at first sight, that a patient developing a ventral hernia would return for treatment; but not so, for in my own case, with the exception of one patient, none of them ever reported, and I only discovered their existence from outside information. Thirty per cent. is, I think, a fair average of hernias following section. Most of the operators with whose work I am familiar have, I am confident, almost if not quite that proportion. I know of many cases in this city, of which the operator himself is not yet cognizant. Now, a ventral hernia is by no means a harmless thing. I can recall women who suffer almost as much from the presence of the hernias as they did from the original disease; in fact, more so. One case I know of had originally a small, unadherent ovarian cyst, found in the course of a general examination, and which gave her few or no discomforts. She now has a good-sized ventral hernia, from which she suffers considerably. These hernias constantly tend to increase in size, and where the woman is one who must be on her feet constantly, carrying heavy burdens, lifting heavy weights, or in fact doing anything which will increase the tension at the abdominal opening, the result must invariably be a rapid enlargement of the protrusion, with all the accompanying distresses. There is no good reason that some of these cases should not eventually, from various causes, become strangulated, and require a second and more serious operation; this has actually occurred. The mere protrusion and displacement has caused so much trouble, that an operation has been devised for the closure of the opening. The causes of hernia have been somewhat a matter of discussion; some contending that the drainage tube is most at fault, while the advocates of the tube repudiate that idea. Then again, improper suturing is charged with the results. Whatever the cause, the lesion is certainly a lack of union of the muscular tissues and the deep fasciæ; the remedy is plainly that of securing perfect apposition of the edges of these tissues. Time is frequently, in an operation, a most important element, and there is no need of wasting it by passing a separate row of sutures in the peritoneum itself, as has been advocated and practiced in some of our neighboring cities. The peritoneum always unites, and does so in a very short time. As far as I know, it has never failed to do so, excepting in those cases where the whole incision failed. The hernia is always found to have a covering of skin, superficial fascia and perito-

neum. It seems to me that a continuous catgut suture of the muscles and deep fasciæ is all that is needed, beyond the usual all the way through suture. I can recall a case where the presence of a hernia, by demanding an operation for its closure, resulted in the death of the woman.

This city now contains a large number of women with fistulous tracts in their abdomens. Some of them have followed drainage, and others have been produced by abscesses rupturing through the incision, and the track never closing again. The extraperitoneal method of treating the pedicle in hysterectomy is a very frequent cause. The length of time it takes the clamp to come away is often so great as to leave an opening, which constantly discharges pus, in small quantities, it is true, but yet enough to be exceedingly annoying and uncomfortable. I have had two such fistulæ following hysterectomy, and neither of them have I yet been able to cure; one, however, now gives fair promise of soon closing. I have, fortunately, had no other fistula tracts following my operations. One case I know of was a few years ago operated on for some pelvic trouble, and after a few weeks the patient was sent to her home with a drainage tube (rubber, I think), in her abdomen. The surgeon lost sight of her, and the tube, being neglected, became most foul. The case afterwards drifted into one of our large general hospitals and there died. Another case was operated on for a pus tube. The second tube and ovary, being apparently healthy, were left *in situ*, but these afterwards took on disease and a second operation failed to remove it. A third operation was undertaken by another surgeon, with what result was never known but by a select few; certain it is that a fistula track followed, after a severe illness. This woman also finally found her way into one of the general hospitals, and was miserable enough to die, if she did not do so; what finally became of her I do not know. A third case had one side of a double tubal trouble removed, and the drainage track never closed. I saw this woman a year or more after the operation, on her deathbed. The track was discharging pus freely and always had done so. Before her death faeces were also finding their way through the opening, a slough having evidently come away from the bowel. A fourth case, after everything else had been done without success, had a counter-opening made into the vagina by another surgeon into whose hands she had fallen. The operation also, unfortunately, opened the bladder, so high up that it was impossible to repair it. She has now a vesico-vaginal fistula in addition to her other troubles, and at last report was in a dying condition. And so I could go on with case after case, some as bad and some not so bad; but, at its best, a fistula is a most miserable complication, and too much attention cannot be given to their prevention. If the drainage-tube is not responsi-

ble for the herniæ, it certainly is for a large number of the fistulæ; and although I am a firm believer in the advantages to be derived from free drainage, I fully realize its disadvantages, and often wonder if it could not be done away with oftener than it is. The great preventive of the formation of these fistulæ is to prevent abscesses forming and the necessity of their subsequent discharge, if they do form, it is better to go boldly in and empty them at once, than to wait and have them open by a slow, tedious and uncertain process, which may not be brought to an end before the patient is; the avoidance of the unnecessary use of the drainage tube and, when it is used, the most careful attention to its cleanliness, and its early withdrawal. I believe a permanent track results oftener from an unnecessarily prolonged use of the tube than from any other cause.

Fæcal fistulæ are not so common, and yet enough of them occur from time to time to be a warning of the danger of their production. When they do occur, they are usually so deeply seated and so bound around by inflammatory products that they cannot be reached, and if they are reached, as a rule, require one of the most dangerous and difficult operations in the whole range of abdominal surgery. I can recall a number of these accidents. One could not be reached after an extended trial, and the whole incision was closed up in order that the patient might die as quietly as possible; this she did not do, however, but lived in spite of everything, and the track afterward closed of its own accord. Another case required the most constant and careful irrigation, after an unsuccessful attempt had been made to reach it, to save the woman's life. And so they go; if an attempt is made to close them, a great risk is taken; if they are let alone and do not close spontaneously, the patient had better be dead. The usual cause, as far as I have been able to observe, is intestinal adhesions to diseased organs. Often after tearing a loop of gut loose, I have returned it in fear and trembling, lest a piece at the point of adhesion slough out and give me a fæcal fistula. The prevention is the greatest care in tearing loose each adhesion, and a most careful attention to the after-treatment. When they do occur, they are best left alone.

The continuance of pain or the appearance of a pain not before present, following abdominal section, is so common, that every one engaged in this kind of surgery must have noted its frequency. This pain is usually not very severe, but is of a constant nagging character, such a one as to so constantly wear on a woman's nervous system that it soon renders life a misery to herself and a burden to every one around her. At times, however, it assumes a severe character and becomes almost unbearable. I have known of a large number of such cases, some of which required an operation for their relief: In two cases

of this kind the only lesion found was an adherent omentum to the abdominal incision, the freeing of which cured the pain. Many others are now going about, suffering as much as they did before the operation. Most of this pain is, I believe, due to adhesions formed between the omentum or intestines and raw surfaces left by the operation, and the subsequent dragging on these points. This would seem to be true, as most of the cases which I have known of and which were operated on and the adhesions released, have been cured or nearly so. I also think that the adhesions in the original disease often cause most of the suffering; this is especially so in the pelvic cases. From these same adhesions we have sometimes an obstruction of the bowels, either at once, or later after convalescence, and causing death in consequence. I can remember several cases of this kind which could be explained in no other way; and, in fact, some of which were demonstrated to be so by a post-mortem examination. The remedy for their formation and all their attendant dangers and discomforts is to keep the bowels moving, so they can have no chance of adhering. The best way of accomplishing this is by purgatives, and by the *non-use* of opium. Fortunately, the indications for purgatives are so many and so constantly present, that they can almost always be used.

Edema of the lower extremities I have a number of times seen; sometimes only temporary, but at others of long enough duration and severity to be of considerable annoyance to both patient and surgeon. In my own practice this has occurred several times, but has always eventually cleared up.

When every person about to undergo an abdominal operation must run the gauntlet of all these complications, as well as many more unmentioned, it becomes a serious matter in deciding for or against an operation. We have here more than the immediate risks to life to consider; we must think, if the patient has his or her present disease removed, will she be any better off, or may she not be the worse for the interference? At any rate, such a state of affairs should be a warning to inexperienced men not to be misled by the brilliant reports seen in the journals, and not to rush thoughtlessly into an operation, expecting to produce the same perfect results. They should know that, as a rule, only favorable cases are reported, and that men do not like to publish to the world their bad work or misfortunes. Abdominal surgery is by no means the simple, easy procedure some men would make us believe, and such an operation should never be undertaken except after the most careful consideration of all the risks that must be run, the chances of benefit to the patient, and in the presence of actual demonstrable disease. Until the dark sides of abdominal work are well known to the profession at large, the *furor operations* which have been so justly complained

of will continue, and many women will succumb to the results of inexperience. He has had cases of fistula where the drainage tube was not used, but these were due to non-encapsulation of the pedicle ligatures. In one, while using the syringe, the ligature was washed out. This gave him the cue, so in the others he fished the ligature out by means of a small hook on the end of a fine wire. On the other hand, in the case of an ovarian abscess, he had kept drainage up for several months, and yet the track closed. It is his intention in a third case to pass nitric acid to the bottom of the fistula and see what can be accomplished in this way. In this case she menstruates through the track. He thought if operators would wait some time after they have operated, before reporting their cases, they would find a number of hernias. He takes a good deal of pains to avoid this accident and close the abdominal wound in an analogous way to that described by Dr. Price. The tendon, when retracted, he brings forward as much as possible with forceps, so as to bring it in contact with its fellow. He has had cases, in spite of every care. In the official report of Imlach's cases, although these were all cases of oöphorectomy, needing a very short incision, the percentage of hernias was 15. He keeps his patients in bed for two weeks before allowing them to sit up. In two cases in which he removed the ovaries, in fibroid tumors, he has had the incision rupture from too early taking out of the stitches. In these cases he sometimes leaves them in for two weeks. One case went home nineteen days after operation, in spite of orders, and the train becoming derailed, the jarring forced the cutaneous part of the wound open. Stitches had to be put in.

DR. M. PRICE did not think with Dr. Baldy that abdominal surgery had anything to regret in these cases. He admitted that much of the dirt and filth, and many of the accidents which follow these terrible operations, are actually due to the surgeon. He did not wonder at there being fistulous tracks, for the reason that in many of these cases the adhesion to the bowel are of such strength that their separation often removes everything down to the mucous coat. He has seen as much as six or seven sutures applied to such a case. Fistula is a repetition of the old abscess, which finds its way to the surface through the drainage track. All of the disease has not been removed. In many cases the fistula saves the woman's life, and gives the surgeon a path through which to perfect his otherwise imperfect work. Fistula is a proof that the case has not been properly cared for. He did not believe that 30 per cent., or even 5 per cent., represented the number of hernias. He has only seen two cases follow. Their closure is unattended with danger. If due care and cleanliness are observed fistulae will not occur.

DR. WM. GOODELL, wholly agreed with the writer of the paper in regard to the stubborn nature of these fistulae, and to the impossibility of avoiding them. He had now three cases of fistula. One had followed the removal of an intraligamentary cyst, in which he had reopened the wound for bleeding. She recovered, but a faecal fistula had made its appearance about the fifth day, and had never closed. He had to peel off the tumor from the rectum. It was now a year and a half since the operation, and she was in the hands of a competent surgeon in the country. The only annoyance to the patient is an escape of gas from the wound. The second case, followed, the prolonged use of the drainage tube, after abdominal section, for pelvic abscess. He had not had charge of the after-treatment, but she was in the hands of a skillful surgeon. It may be needful yet to make a counter opening in the vagina. The third case was one of recurrent, intraligamentary cyst. The fistula resulted from a previous operation in which the surgeon used the clamp many years ago. He operated last November, and removed a recurrent cyst lying in a very large abscess cavity. A drainage tube was then used, which he still kept in because he could not get the fistula to heal from the bottom. To-day he made an application of iodine to the tract and told the husband to repeat it daily for a time.

DR. J. PRICE was a little surprised that one so deeply interested as Dr. Baldy was in this subject of abdominal surgery, should stimulate vicious elements to criticism of our present position, especially since they now had their attention turned towards surgery of the brain, spinal cord, etc. Dr. B. speaks of hernia. The position of the incision, the condition of the abdominal walls and the manner of introducing the sutures are of great importance. Death has followed tight sutures, and he was satisfied that herniae often followed them. He always draws his sutures lightly. If you used three or four to the inch, tied them lightly, with perfect coaptation, your results will, as a rule, be perfect. In introducing his sutures he takes in half as much skin as fascia and twice as much fascia as peritoneum. This gives better apposition to the centre of the wound. He has not had a suture track abscess for more than a month, nor has there been any mischief about the tube. Nursing is of the greatest importance. The old nurses are meddlesome and dangerous, and he was glad to see them replaced by younger women. The tube can be dispensed with very often if the irrigation be thorough. Most surgeons are in too much of a hurry to get their patients up. Early rising is dangerous, and he has known surgeons to brag of getting their patients home in ten days. In fistulous tracks through which menstruation occurs, the only thing to do is to tie the tube and

release it from the abdominal incision. He was often led to deliver the bowel, in order to release adhesions and even then torn the bowel down to the mucous coat. This does no harm if the serous surfaces are brought together. A drainage tube resting against those torn bowel surfaces favor the occurrence of a fistula. A man who gets scared at a fistula or ventral hernia is not prepared to do good work; his work begins in doubt and ends in disaster. The operation for curing a ventral hernia is not dangerous. We cannot ignore the importance of precision in diagnosis. We must try to decide as to the probable nature of the lesion. Dr. Baldy called attention to one point, that is the necessity of recognizing something definite, on which to operate. Savage and others are satisfied to operate for subjective symptoms only. This is not right.

The other day he refused to operate in a case which had multiple abscess in the lungs. Two weeks before he had gone to the house prepared to operate, but the family had refused. The time will come when operators will be most arbitrary in these cases. We shall have the right to say, that if the general practitioner waits until the eleventh hour, we will not step in, only when it takes a feather to depress the beam. Last summer a patient refused operation, to-day she sent for me and requested it. Peritonitis is often due to an imperfect toilet. It is often of limited extent or localized, leaving adhesions to portions of the viscera. This is a common source of pain and discomfort. The only good remedy is to do the work over and release the adhesions. This past summer he had either done himself or assisted others do eight of these operations over, and they had been the most difficult and trying of his whole experience. He wished to call attention to one case on which he had operated three times. Dr. Baldy saw the work. When he first saw her pus was escaping from the umbilicus. He opened the abdomen but failed to remove anything. Drainage was followed by a good recovery, but the wounds did not close. A year later he reoperated, but a fistulous track was left. Again a year later he used a catheter made of coils of wire. He passed this along around the ileo-pectineal line, towards the region of the kidney. He dissected along the pelvic bones and irrigated through the catheter. Last week, she was delivered of a fine baby, somewhere in the west. In this case he could find the ovaries and there was no lesion of them or the tubes. This is the only case of pelvic abscess without tubal disease, he had ever seen, in a long and rich experience. He wished to speak of two of the cases referred to by Dr. Baldy in his paper. One case he had operated on early in his experience, and had removed only one side of a specific tubal trouble. This he would never do again. The patient went into other hands and he did not

care to refer to the ghastly surgery which followed. Another case of which he had personal knowledge, was a case of imperfect surgery. This was a large pus sac which could have been removed, but was drained. The woman died of psoas abscess. Skene had called attention in his book, that pelvic abscess frequently caused psoas abscess. The incomplete removal of diseased tubes, should be rectified. If an inch of tube is left it will most likely do mischief. He has curetted into the cavity of the uterus, removing a cone-shaped piece. The tubes should be tied hard on to the uterus, and the ovaries should be tied at a good surgical neck, and the results will be about perfect.

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Scheme for Providing Ambulances for the Metropolis—Color Blindness and Color Perception—Causes leading to Outbreaks of Measles in Glasgow—Glycerine Enemata in Obstinate Cases of Dysentery in young Children—Tobacco Smoke as an Antiseptic—Influence of Electric Light upon the Eyes.

Mr. Ryan recently read a paper at the Middlesex Hospital before the Hospitals Association, which gave the outlines of a scheme which will be a great boon to Londoners. Dr. Livingstone is said to have remarked that the ordinary wayfarer in the streets of London stands in more danger of injury to life and limb than a traveler in the wilds of Africa. What is now wanted is a number of proper ambulances scattered all over the metropolitan area, so that in case of accident one shall always be obtainable. Mr. Ryan's paper set forth the details of a scheme which has been elaborated with this object. Briefly, the plan is to raise a fund of £1,500 for the purchase of seventy Ashford litters, in addition to those already kept at police stations and certain hospitals, and to distribute them at a number of new stations within the four-mile radius. Mr. Ryan suggested that the Fire Brigade stations would be good centres. But still other posts would be required, and there, it is suggested, might be certain railway stations and public buildings. It was announced that there would be no difficulty about the £1,500 required for the initial outlay. What is wanted is the collection of a guarantee fund to cover the cost of generally keeping up the undertaking. The annual expense is estimated at £277. The scheme, it is announced, will soon be an accomplished fact.

Dr. Eldridge Green, in a paper upon *Color Blindness and Color Perception*, held that the color

perception centre of every individual was able to appreciate a certain number of units of color, these units corresponding more or less to the bands of the solar spectrum. Dr. Green considers the average number of units to be six, namely: red, orange, blue, yellow, green and violet, but persons of unusually good color perception passed a seventh, viz.: indigo or dark blue, which was placed between the blue and the violet. In persons with color perception below the average, one or more units of color would be wanting. He considered that orange was the first to disappear, and it was replaced by a widening of the red and yellow bands. Such a person belonged to the five unit class. The blue band disappeared next, the violet then extending to the normal blue green junction. The next band to fail was the yellow, the red then reaching to the green. The green and red then became as one band, and so the units were reduced to two, the violet still remaining. In total color blindness these two were replaced by a neutral band. Dr. Green deduced the following facts as to color perceptions in his investigations: 1. A person can have no conception of a color which does not form one of his psychophysical color units, or a very apparent modification of one of them. 2. If the colors belonging to two adjacent units be mixed, an impression of both units is obtained which is plainly perceived as a mixture. 3. If two colors not adjacent be mixed the intermediate color will tend to be brought before the mind, or white will be the result in the case of pure light, gray where there is partial absorption. 4. If any number of colors be mixed, the resulting impression will be that of a unit, a modified unit or white.

Dr. Russell, Medical Officer of Health for Glasgow, has published some rather startling statistics tending to show that an outbreak of measles in his district was due to infection during attendance in church. During the month of January forty-two persons belonging to the congregation of a Gaelic church were taken ill with measles. Taking twelve to fourteen days as the recognized period of incubation, Dr. Russell connects two serious groups of cases with the attendance at the church of two girls, on December 30 and January 13 respectively. One of these girls, it is ascertained, had come from an infected house, while the other had actually taken the disease two days before. Two other girls who usually worshipped elsewhere, but were in this particular church on the 13th, became ill on the 26th, and other circumstances pointing in the same direction are noted. Dr. Russell considers that unless something like perfect isolation and disinfection can be guaranteed to a person who is suffering from infectious disease in a house, all healthy members of the household should be debarred from attendance at school, church, or other place of concourse.

Lately Dr. George Rice has found that the gly-

cerine enema is one of the very best and most reliable means of combating the obstinate dysentery in young children which is frequently most difficult to relieve. Simple diarrhoea, too, quickly yields to the glycerine treatment, a couple of drachms being, according to Dr. Rice, generally sufficient to ensure some improvement, which a second dose completes. In place, however, of enemata of the ordinary kind, Dr. Grewcock recommends a tuft of cotton wool soaked with glycerine and applied in the same manner as a suppository, a few minutes sufficing to bring about the desired result.

Tobacco fumes have often been stated to be antiseptic. More than once it has been said that smoking has protected a house from small-pox, and even from cholera. Quite recently Dr. Hajek, of Vienna, has declared that smokers are less liable to diphtheria than non-smokers in the ratio of 1 to 2.8, and Dr. Schiff says that smoking is forbidden in the bacteriological laboratories, because it is known to hinder the development of bacteria in the various culture media.

A communication has been made by a well-known oculist of Cronstadt concerning the bad influence of the electric light upon the eyes. There have come under his observation within the past ten years thirty people suffering from a disease of the eyes. The symptoms were the same in each case, and all the patients had perforce of their employment been accustomed to remain for hours at a time near electric lighting apparatus. The new disease is called photo-electric ophthalmia. The patient is apt to be awakened in the night by great pains around the orbits, accompanied with an outpouring of tears. Intense photophobia is another characteristic of the malady.

A parcel was during this month discovered by the porter of the Huddersfield Infirmary, and on being opened it was found to contain 225 sovereigns. This is the second gift presented to the institution in this strange manner, a sum of £284 having been left at the Infirmary a few years ago.

Miss Flavin, a young lady from Liverpool, is on her way to Father Damien's leper colony. Brave, earnest woman; she knows that she is about to doom herself to a repulsive life among pariahs whose only business is to await a loathsome death. "I am," she said to a friend recently, "not seeking notoriety or reward, only the spiritual comfort of doing for these dying creatures what their terrible disease keeps other people from doing."

Dr. J. W. Washburn has been appointed to take charge of the new department of bacteriology at Guy's Hospital. Sir William Jenner is reported to be still far from well. It is understood that in the event of his resigning his office at court he will most probably be succeeded by Dr. Russell Reynolds, who is now physician to the household.

G. O. M.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Meeting of the New York Academy of Medicine—Paper by Dr. T. Gaillard Thomas, on Mania and Melancholia following Gynecological Operations—Six Cases reported.

One of the largest audiences of the season assembled at the first meeting of the Academy of Medicine, in April, to hear a paper by Dr. T. Gaillard Thomas on *Acute Mania and Melancholia or Sequelæ of Gynecological Operations*. The object of the paper, he said, was to place on record what he thought must be a rather remarkable experience as regards the matters in question. He desired to call attention at the outset to the fact that he did not announce these peculiar and alarming states as complications, or necessarily as results of operative procedure, but merely as sequelæ, which might or might not, be dependent upon it. Further, in this connection, he wished to disclaim the position that the operations performed for the relief of diseases peculiar to women are especially liable to such sequences; although all his personal experience was limited to this particular field.

Having defined his idea of the conditions entitled acute mania and acute melancholia, he stated that he would relate six illustrative cases. Out of these, he said, four were violent, and showed great mental exaltation throughout, while two were melancholic in their development; but they were acutely, violently melancholic, bustled about wringing their hands in their very distress, and after a short illness they died, as did two of the four who presented symptoms of pure exaltation.

Case 1.—Mary M., æt. 21, single, by occupation a cook, had noticed during the year before she was seen an abdominal enlargement which had steadily and rapidly increased. She had emaciated very rapidly, and was at the time she came under observation extremely weak and low spirited, and now felt that unless relieved very soon she would die from exhaustion. Physical examination revealed a large accumulation of fluid in the peritoneum, and, in addition, a round tumor occupying the whole of the left side of the abdomen. Although the case was not looked upon as a favorable one for operation, it was determined that, since extirpation of the tumor offered the only chance for the saving of life, it should be resorted to. The operation was accordingly performed, and the patient rallied well after it. She was fed upon liquid diet, and quieted by the administration of opium. Nothing existed to excite alarm, except her extreme nervous depression, and with the exception of this symptom

she appeared to be progressing favorably until the seventh night. Then she seemed more than usually nervous and excitable, and desired to see the priest, who was accordingly sent for. On visiting her early on the morning of the eighth day Dr. Thomas found that a great change had come over the patient during the night. Her eyes were wild and haggard, her face maniacal, her tongue red and dry, and she constantly talked in an incoherent and violent manner, like a woman suffering from puerperal mania. As he entered the room she covered her face with the bed-clothes and screamed out that he had leagued with the priest to murder her. Her pulse was now 160, and she remained in the same maniacal state until evening, when she sunk into coma and died. No post-mortem could be obtained.

At the time of this patient's death, now exactly twenty years ago, he regarded the condition which destroyed her life as one of acute septicæmia, a pathological factor which was then only just coming into notice, and one of which almost nothing was known. His subsequent experience with septicæmia, however, had convinced him that he was in error in this hypothesis. This case was by far the most rapid that he has ever met with. Its acute stage could not have lasted more than thirty-six or forty hours, while its prodromic, or melancholic, stage had existed ever since the operation. It was in all probability that mental state which made the patient constantly persist, as she did, in the assertion that her death was certain. An examination of the membranes of the brain, he thought, would have been most interesting in this case if an autopsy could have been obtained.

Case 2.—Mrs. X., a wealthy and fashionable lady, came under his care on account of severe suffering at her menstrual periods. She was 35 years of age, the mother of four children, and a stout, well-made woman. Her health was perfectly good, except that as her menstrual periods approached she would begin to suffer such intolerable neuralgic pain in the region of the ovaries that her life was rendered wretched. After consultation with two of the most eminent general practitioners of the city, the ovaries were removed. She recovered rapidly from the operation, but at the end of three weeks a low grade of melancholia developed, which soon took the form of violent acute mania, marked by tendency to strike her attendants. Her violence rendered it necessary to remove her to a lunatic asylum, and here she remained for four or five months, entirely insane. She then recovered and returned to her home and after the lapse of six or eight years is still perfectly well.

Case 3.—A Jewess, multipara, æt. 35 years, entered Dr. Thomas's service at the Woman's Hospital, and was submitted to the operation of perineorrhaphy. There was nothing peculiar in

this operation as to severity or any other feature, and after it she did perfectly well until the ninth day, when the sutures were removed. At that time she became violently maniacal; talking constantly, jumping out of bed, throwing her arms about, and berating her attendants in strong, though not absolutely improper, language. It proved so utterly impossible to control her that a straight-jacket had to be applied. The patient raved violently for four days, and then sank into a comatose condition and died.

Case 4.—Mrs. R., a multipara, æt. 42 years, who for years suffered from retroflexion of the uterus, which was marked by profuse menstruation, came to him from Liverpool, England, for the repair of a badly lacerated cervix. The operation was performed at his private hospital, and presented no peculiar features. The patient's manner was noticed to be somewhat odd, and after the removal of the sutures, on the ninth day, she told him that in a few days she wanted to have a private conversation with him about a terrible crime which she had committed some years before, and the memory of which had ever since filled her with remorse. Two weeks after the operation the patient left the hospital; but after remaining away for a fortnight she was brought back suffering from acute melancholia. She was constantly depressed on account of remorse for a supposed crime, would sit silent for hours, and would then get up and pace the room slowly and solemnly, wringing her hands, weeping, and bemoaning her sad lot. She continued in this state, in the meanwhile gradually growing weaker, for ten days, when she became comatose and died. Uncontrollable insomnia was one of the most marked features of the case.

Case 5.—Mrs. C., a multipara, æt. 65 years, was submitted by Dr. Thomas in his private hospital to amputation of the breast. Even before the operation she seemed to be a flighty and eccentric person, but after it all her symptoms were intensified. On the ninth day the sutures were removed, and from this date the patient became gradually depressed, was sure that she could not recover, and wept almost constantly. She suffered during the earlier part of her illness from insomnia, and continued to do so until the symptoms of coma began to show themselves. The state of acute melancholia advanced until she refused all nourishment, and for a time she was sustained entirely by rectal alimentation. This patient lived for about two weeks after the breaking out of the attack, and then slowly passed into coma and died. Towards the close of the case the urine became albuminous and presented hyaline casts.

Case 6.—Mrs. M., a widow over 60 years of age, who had in early life borne several children, entered his private hospital to have a cancerous breast removed. Even before the operation her

somewhat peculiar manner excited attention, but it was not suspected that she suffered from any real mental aberration. About a week after the operation she began to grow noisy and irritable, and by the ninth day, when the sutures were removed, she was at times, chiefly during the night, absolutely maniacal. Then periods of perfect calm and lucidity of intellect would occur, and last for hours. At the end of three weeks from the time of operation, partly in consequence of her earnest desire, partly because it was thought a change of scene would benefit her, she was allowed to return home. Here in a few days violent mania developed, and at the present time she is still insane.

Having concluded his narration of cases, Dr. Thomas stated that there was very little literature extant upon this subject, which, until recently, had attracted no attention. Prior to the year 1887 there was nothing. During that year Dr. Edward J. Ill, of Newark, N. J., published an interesting pamphlet entitled "Acute Psychoses following Gynecological Operations," which embodied his own experience and that of some German physicians. In it he collated the records of ten cases in which acute mental aberration followed gynecological operations. Of these three occurred in his own practice. The first was a case of acute mania following ovariectomy, the second one of melancholia following ovariectomy, and the third was one of melancholia following a minor operation upon the bladder. All recovered. The reports of the seven cases which followed are all drawn forth by the discussion excited by a paper read by Graube before the Berlin Gynecological Society, in 1887. One case reported by Graube occurred after perineorrhaphy, performed by Paul Ruge, and was entitled, by the reporter, a case of hypochondriasis. The second case was reported by Durelius as following amputation of the cervix. Czempin reported five cases of acute insanity which occurred at Dr. H. Martin's hospital. Of these, two followed excision of the rectum for carcinoma, one, an operation for prolapse of the uterus, one, an excision of hæmorrhoids, and one, an ovariectomy, which ended fatally on the tenth day; the mania being the cause of death. In the same year Guanck reported a case of severe melancholia following simple perineorrhaphy.

In 1888 Werth, of Kiel, read a paper on this subject before the German Gynecological Society, at Halle, in which he stated that in 300 operations on the female genital tract, he had in six instances observed psychical disturbances, due to the operation. In two cases the operation was total extirpation of the ovaries; in two, removal of the ovaries, and in two, ovariectomy. One patient was violently excited before the operation. In five cases the mental disturbance took the form of melancholia, and in one, of mania. In one case the psychosis appeared five days after

operation, in one, eight days after, and in one, three weeks after; while in the remaining two cases it developed after the patients had been discharged. Of the six cases, three recovered, one after fifteen days, one after four months, and one after eight months. In two of the other cases there was no improvement, and the third patient committed suicide three and one-half months after the operation. The result could not be referred to iodoform poisoning, as the drug was used sparingly or not at all. Säger, in discussing this paper, said that he recalled several cases in which cerebral symptoms had developed after gynecological operations. In two instances these were clearly referable to iodoform; though little was used on the dressings. In spite of the facts stated, however, he believed that patients with pelvic troubles having a tendency to psychosis should be treated in the same manner as other women.

In an article by Fillebroun, of Hamburg, published in the *American Journal of Obstetrics* for January, 1889, the author mentioned three cases of mental disturbance following gynecological operations observed by Prochowick, of that place. In two cases of melancholia improvement was very slow, while in the third case, which was one of violent mania developing three months after operation, the patient entirely recovered.

Dr. Thomas then went on to say that in four out of his six cases there was evidence of eccentricity even before operation, and in two of these four it was quite marked at times. In all the cases except one there were distinct prodromic symptoms following operation, and antedating by some days the formal outburst. In none of the cases could he discover evidences of hereditary tendency to insanity. Out of the six, four died, one completely recovered, and one was still in progress. In all the cases except one the renal secretion was carefully watched, and in none did the kidneys appear to be factors in the mental state. In four not a particle of iodoform was used at any time, and in the other two this drug was used, according to his custom, very cautiously and entirely on the line of cutaneous union, where absorption is next to impossible. He also felt very confident that none of his cases were instances of sudden and severe septicæmia marked by delirium.

It would be seen, he continued, that when his cases were added to those reported by others twenty-six instances of acute mental aberration following upon the performance of gynecological operations, were now placed on record. In concluding, he said that the following questions had suggested themselves to his mind in connection with this subject:

1. Were these twenty-six cases of mania and melancholia really due to the operations which immediately antedated them, or did they follow as mere coincident states, *post hoc, sed non propter hoc?*

2. Any great mental strain may be followed by mania. Is it at all remarkable that in the vast number of gynecological operations which have been performed during the last quarter of a century, in America and Germany, twenty-six cases of this malady should have occurred?

3. If the mania which followed operative procedures in these twenty-six cases was a consequence of them, how in the future is a tendency to the accident to be avoided?

4. Are the operations of gynecology any more likely than other surgical procedures, to disturb the condition of the mind?

P. B. P.

An Honorarium Well Merited.

Dear Sir:—The enclosed slip is such a rare compliment paid to one of our profession that I think it deserves notice. It is as follows:

Be it ordained by the Municipal Assembly of the City of St. Louis, as follows:

SECTION 1. The sum of five hundred dollars is hereby appropriated from the fund to pay Dr. A. C. Bernays for medical attendance on Murty O'Sullivan, a member of the police force, from June to September, 1888, who was injured in discharge of police duty on June 26, 1888, and the Auditor is directed to draw his warrant on the Treasurer for the above amount and deliver the same to Dr. A. C. Bernays, taking his receipt in full.

SECTION 2. There is hereby appropriated and set apart out of municipal revenue to pay Dr. A. C. Bernays the sum of five hundred dollars.

Approved March 30, 1889.

The municipal assemblies of a large city pass an ordinance to pay a doctor \$500 for a successful surgical operation on a policeman who was shot in the abdomen while attempting to make an arrest. The stomach, abdomen and jejunum required to be sutured. The laparotomy was done a few hours after the accident. Truly the world is getting better, and our profession is being recognized by a city assembly.

Respectfully,

W. W. KINGSBURY, M.D.

St. Louis, April 17, 1889.

NECROLOGY.

Samuel W. Gross, M.D.

Samuel W. Gross, M.D., Philadelphia, Pa., Professor of Surgery in the Jefferson Medical College, died on Tuesday the 16th inst., at the age of 52 years. He was a son of the late Samuel D. Gross, so long at the head of the surgical profession in this country, and was born in Cincinnati, O., while his father was occupying the chair of Pathological Anatomy in the Medical College of Ohio. He was educated in Shelby College, Ky., and graduated in medicine at Jefferson Medical College, Philadelphia, in 1857. He entered directly upon the practice of his profession in the last-named city. He served as Brigade Surgeon and Major of Volunteers through the Civil War,

and was brevetted Lieutenant-Colonel at its close.

He has made several valuable contributions to medical literature, for the most part on surgical subjects. Perhaps his "Practical Treatise on Tumors of the Mammary Gland" contributed more to enhance his reputation as a writer than any other. Although he had filled the chair of Surgery only since his father's death in 1884, he had earned a good reputation as a didactic and clinical teacher. His death came unexpected, in the vigorous period of manhood.

BOOK REVIEWS.

HANDBOOK OF THE DIAGNOSIS AND TREATMENT OF SKIN DISEASES. By ARTHUR VAN HARTLINGEN, M.D., Professor of Diseases of the Skin in the Philadelphia Polyclinic and College for Graduates in Medicine; Clinical Lecturer on Dermatology in the Jefferson Medical College. Second Edition, Enlarged and Revised, with additional Plates and Illustrations. Philadelphia: P. Blakiston, Son and Co. 1889.

This is a neatly published octavo volume of 410 pages, designed by the author as a plain treatise on the diagnosis and treatment of the various diseases of the skin, such as would be most useful to the general practitioner. The issue of a second edition with important additions is sufficient evidence that the work has met the approval of the profession.

A CLINICAL ATLAS OF VENEREAL AND SKIN DISEASES; including Diagnosis, Prognosis and Treatment. By ROBERT W. TAYLOR, A.M., M.D. 192 Figures, 58 Colored Plates. Parts V and VI. Philadelphia: Lea Bros. and Co.

The earlier fasciculi of this work have been already noticed. These maintain the standard of excellence of the others. The plates are exceedingly good. The subjects illustrated in these numbers are Urticaria, Pemphigus, *Tinia Tricophytina Barbæ*, *Tinia Circinata*, Ecthyma, Lupus Erythematosus, Herpes Zoster, Pediculosis, Erythema, Erythema Circinatum, *Tinia Versicolor*, *Tinia Tonsurans*, Pityriasis Rubra, Dermatitis Exfoliativa, Impetigo Herpetiformis.

MISCELLANY.

AN INTERNATIONAL CONGRESS OF OTOTOLOGY AND LARYNGOLOGY will be held in Paris from the 16th to the 21st of September, 1889. Professor Duplay is President of the Committee on Organization, and Dr. Loewenberg, rue Auber, 15, à Paris, Secretary, to whom all communications should be addressed.

STATE MEDICAL SOCIETY OF ARKANSAS.—The Fourteenth Annual Session of this Society will be held at Pine Bluff, commencing on Tuesday morning, May 28,

1889, and continue three days. A full attendance and a profitable meeting is expected. For further information apply to L. P. Gibson, M.D., Secretary, Little Rock, Ark.

AMERICAN CLIMATOLOGICAL ASSOCIATION.—The next annual meeting of this Association will be held in Boston, June 24th and 25th, 1889, just prior to the meeting of the American Medical Association at Newport. Dr. V. Y. Bowditch, of Boston, President. An interesting series of papers have been secured and the meeting promises to be a very successful one.

ILLINOIS STATE MEDICAL SOCIETY.—The Local Secretary at Jacksonville, Dr. T. M. Cullimore, informs us that the list of railroad companies named below have agreed to carry delegates at reduced rates to the meeting of the Illinois State Medical Society to be held in Jacksonville, May 21st to 23d. The rate will be one and one-third fare, on the certificate plan. Delegates must consult local agents for instructions as to procuring certificates, and certificates must be countersigned by Local Secretary. Chicago & Alton; Chicago & Northwestern; Chicago, Burlington & Northern; Chicago, Burlington & Quincy; Chicago, Milwaukee & St. Paul; Chicago, Rock Island & Pacific; Chicago, St. Paul & Kansas; Chicago, Santa Fe & California; Illinois Central; Rock Island & Peoria; Wisconsin Central Lines; Wabash; and Jacksonville Southeastern.

IOWA STATE MEDICAL SOCIETY.—The Iowa State Medical Society will meet this year at Keokuk, on May 15th, and will continue in session three days. President, Donald Macrae, M.D.; Secretary, S. S. Lytle, M.D.

THE American Association for the Advancement of Science meets at Toronto, Canada, August 27, and will remain in session until September 3, inclusive.

PAMPHLETS RECEIVED.

Adams, Samuel S., Washington, D. C. *Hernia of the Pregnant Uterus*. Reprint from the Amer. Journal of Obstetrics and Diseases of Women and Children.

Brown, Dillon, M.D., New York City. *Intubation of the Larynx in Diphtheritic Croup*. Reprint from the New York Medical Journal.

Eliot, Llewellyn, M.D., Washington, D. C. *The Resuscitation of Asphyxiated Newborn Infants by the Suspension Method*. Reprint from Transactions, Vol. I, 1888.

O'Dwyer, Joseph, M.D., New York City. *Intubation in Chronic Stenosis of the Larynx, with a Report of Five Cases*. Reprint from the New York Medical Journal.

Rauch, John H., M.D., Springfield, Ill. *Preliminary Report to the Illinois State Board of Health. Water Supplies of Illinois and the Pollution of its Streams*.

Shrady, John, M.D., New York County. *Address on Medicine—Medical New York in 1800*. Reprint from Transactions of the New York State Medical Association, 1889.

Wyman, Hal. C., M.S., M.D., Detroit, Mich. *Emergency Hospitals*.

LETTERS RECEIVED.

Dr. Herbert E. Smith, New Haven, Conn.; Dr. Paul Barcus, Odell, Ind.; Dr. H. J. Holke, Mascoutah, Ill.; Dr. H. K. Givens, Fayette, Mo.; Dr. J. T. Crowe, Carrollton, Ill.; Dr. R. J. Dunglison, Philadelphia; Battle & Co., St. Louis; Dr. G. T. McCoy, Columbus, Ind.; Dr. J. B. Murdoch, Pittsburgh, Pa.; Dr. Wm. F. Waugh, Philadelphia; Dr. S. N. Nelson, Boston; Dr. G. L. Magruder, Washington; Mitchell & Maury, Memphis, Tenn.; Mellier Drug Co., St. Louis; Dr. J. W. Powers, Hudson, Ia.; J. H. Chambers & Co., St. Louis; J. D. Larkin & Co., Buffalo, N. Y.; H. P. Hubbard Co., New Haven, Conn.; Rush Medical College, Chicago; Henry Schwindt, New York;

G. P. Pollard, Burlington, Vt.; Fairchild Bros. & Foster, New York; Dr. E. Allen, Athens, Pa.; Dr. Thomas Opie, Baltimore, Md.; J. Walter Thompson, New York; A. B. Stone, Washington; Dr. W. C. Owen, Newburg, Mo.; Edwin W. Ashford, Washington; A. B. Biggs, Louisville, Ky.; Dr. J. M. Fort, Paris, Tex.; Thos. Leeming & Co., New York; Dr. B. St. John Roosa, New York; M. Lanza, Howard Challen, New York; Redington & Co., San Francisco; T. J. Hackett, Milton, Quebec; Parke, Davis & Co., Detroit; Cincinnati Sanitarium; Dr. F. R. Percival, Ft. Hamilton, N. Y.; F. R. Goff, Burlington, Vt.; Chas. H. Phillips Chemical Co., New York; Dr. E. T. Schrider, Alvordton, O.; P. W. Bushong, A. E. Walesby, Louisville, Ky.; Dr. John M. Dodson, Chicago; Dr. D. Dedolph, St. Paul, Minn.; Dr. A. C. Worden, Detroit, Mich.; Dr. P. H. Bailhache, San Francisco; Dr. Anderson, New York; A. H. Roffe & Co., Boston; Lutz & Morius, New York; W. H. Woodworth, Millfield, O.; H. Planten & Son, New York; Dr. J. H. Thornton, Lansing, Ia.; Dr. H. V. Wurdeman, Washington; Lea Brothers & Co., Philadelphia; E. Fougere & Co., New York; Publishers Commercial Union, Chicago; Philadelphia Polyclinic; F. A. Davis, Porter & Coates, Philadelphia; Thos. F. Goode, Buffalo Lithia Springs, Va.; Dauchy & Co., New York; Dr. Clayton Parkhill, Denver, Col.; The Aquidneck, Newport, R. I.; Dr. T. J. Hutton, Millington, Ill.; Dr. W. T. Eckley, Harper, Ia.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from April 13, 1889, to April 19, 1889.

Major John W. Williams, Surgeon U. S. Army, died at Jackson Bks., La., April 15, at 5 o'clock P.M.

Major John C. G. Happersett, Surgeon U. S. Army, is relieved from duty at Willet's Point, N. Y., and ordered to report to the commanding officer, Atlanta Bks., Ga., for duty as Post Surgeon at that post. Par. 12, S. O. 88, A. G. O., April 16, 1889.

First Lieut. Charles E. Woodruff, Asst. Surgeon U. S. Army, is relieved from duty at Ft. Mackinac, Mich., and ordered to Ft. Gaston, Cal., for duty. Par. 14, S. O. 86, A. G. O., April 13, 1889.

Lieut.-Col. James C. McKee, leave of absence granted in S. O. 44, A. G. O., February 21, 1889, is extended seven days. Par. 11, S. O. 86, A. G. O., April 13, 1889.

Capt. Adrian S. Polhemus, Asst. Surgeon U. S. Army, is relieved from duty at Ft. Gaston, Cal., and ordered to Ft. Monroe, Va., for duty. Par. 14, S. O. 86, A. G. O., April 13, 1889.

Major Clarence Ewen, Surgeon U. S. Army, promoted Surgeon U. S. Army, with rank of Major, to take effect April 15, 1889.

Capt. Aaron H. Appel, Asst. Surgeon U. S. Army, is granted leave of absence for twenty-one days. Par. 1, S. O. 38, Hdqrs. Div. of the Missouri, April 16, 1889.

Hdqrs. Dept. of Dakota, St. Paul, Minn., April 8, 1889. Special Order No. 35: Under authority from the Secretary of War conveyed by letter of the 16th ult. from Division Headquarters, the post of Ft. Sisseton, Dak., will be discontinued June 1, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending April 20, 1889.

P. A. Surgeon James C. Byrnes, detached from special duty at Norfolk, Va., and to the "Chicago."

P. A. Surgeon A. C. Heffenger, granted leave of absence for six months, with permission to leave the United States.

P. A. Surgeon Philip Leach, leave of absence extended six months, with permission to remain abroad.

Asst. Surgeon C. H. T. Lowndes, ordered to Naval Academy, Annapolis, Md.

Asst. Surgeon A. M. D. McCormick, detached from the "Vermont" and ordered to the "Chicago."

THE Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, MAY 4, 1889.

No. 18.

ORIGINAL ARTICLES.

THE REMEDY FOR OVERCROWDING IN THE MEDICAL PROFESSION.

Read before the St. Clair County (Ills.) Medical Society, Dec. 6, 1888.

BY BOYD CORNICK, M.D.,
OF MASCOUTAH, ILL.

That the medical profession is overcrowded, is a fact of the gravest import, recognized by physicians everywhere. The lamented Dr. Garnett, in his address as President of the American Medical Association, devoted his entire paper to an earnest and able discussion of this evil, and to suggestions for its abatement. State associations, district and county societies, current medical periodicals and individual physicians, both here and abroad, are manifesting the liveliest concern in the solution of the problem, which is everywhere increasing in importance.

Before proceeding to discuss remedial measures for a recognized evil, let us first consider the essential nature of the disease which we wish to combat. What constitutes an overcrowding in the ranks of the medical profession? How large may be the ratio of physicians to total population without exceeding a reasonable and natural proportion?

We know that in the United States there are more doctors to the 10,000 of general population than in any other country in the world; and yet it may reasonably be doubted if the average income received by American physicians is less than that enjoyed by medical men abroad. On the contrary, it seems to be a well ascertained fact that the average, both of medical fees and of the incomes of medical practitioners in this country, exceeds that prevailing in any other country on the globe. And the cause of this is not far to seek. The average prosperity of the whole people of this country exceeds that of any other people in the world; and doctors, like all other citizens who labor for a livelihood, receive their proportionate share of the prosperity or poverty of the particular country in which they live. In Great Britain there are fewer doctors to the 10,000 of total population than with us, and on the continent of Europe a still smaller ratio, yet this fact does

not give the average medical practitioner abroad any advantage in point of professional income, over his American brother. For, though his patients be more numerous, yet the poverty of the masses of the people, among whom he practices his profession, compels him to accept lower fees and a smaller total income.

It is manifest, therefore, that where prosperity prevails among the people a larger proportionate number of physicians may enjoy comfortable incomes than where the people are steeped in poverty. Were *all* the citizens of the United States sufficiently prosperous to be able to pay reasonable fees for medical services, who could then say that we have too many doctors? But if our citizens, on the contrary, were as largely sunken in the depths of poverty as are the masses of the people on the continent of Europe, who could then deny that the American medical profession would be overcrowded, even though half its number were blotted out of existence within twenty-four hours? For the sake of argument imagine nine-tenths of the citizens of this country to be in the possession of incomes sufficiently ample to purchase the satisfaction of all the material desires incident to modern civilization, and he would be a bold man who should then declare the medical profession to be overcrowded, even were the existing ratio of physicians to general population in the United States doubled, trebled or, indeed, quadrupled.

The criterion, then, by which we may determine when the profession is overcrowded, is not alone the ratio of physicians to total population, but this ratio *taken in connection with the degree of poverty or of prosperity prevailing among the masses*. Bearing this conclusion in mind, we are now in position to consider the remedies which have been offered for the abatement of the universally recognized evil, which is now everywhere under discussion.

Many plans have been proposed for remedying the evil, and many have been tested; but none has yet been presented which on trial has proved to be efficacious. So far as I have observed, every plan which has hitherto been recommended has for its first aim such extension of the course of medical study preliminary to acquiring a diploma, and such elevation of the standard of ex-

aminations prerequisite to securing a license to practice, as would be calculated to deter many medical students of limited financial resources from entering on so difficult and expensive a pursuit; and induce them rather to choose some easier and cheaper, though possibly even more overcrowded avenue, than the practice of medicine, in which to seek honor, reputation and a livelihood.

But if stringent laws, regulating the course of study and the qualifications for practice, could solve the problem of an overcrowded profession, then Germany would have settled the matter long ago. Such laws do accomplish one desirable end which is good in itself; and that is, they elevate the standard of knowledge requisite to entering on the grave responsibilities of medical practice. And, in so far as they do this, they are highly to be commended. But restrictive laws and regulations, in so far as they are designed to prevent the evil of overcrowding in the ranks of the profession, "have so far," to quote the language used by President Garnett, with reference to the less stringent regulations hitherto in operation in the United States, "proved conspicuously futile." And, in the humble opinion of your essayist, restrictive laws of all kinds must, in the nature of things, continue to prove conspicuously futile to the end of time.

Why is it that there is an "almost universal desire prevailing among the working classes to become doctors and lawyers?" Why is it that "the professions of law and medicine are overcrowded?" That the statements, as made by the late President Garnett, are hardly overdrawn, will be admitted on every hand. There must be a cause for this condition of things, as there is for every other ill from which humanity suffers. And it is a rational step for medical men to seek first the cause of an evil which so vitally affects themselves, before resorting further to empirical remedies which have always hitherto proved so "conspicuously futile" in affording relief. For if an efficient cause can be found for this condition which confronts us, and if this cause can be removed, then the disease will disappear, and our problem will have received a solution at last.

That "men seek to gratify their desires with the least exertion" is a fundamental law of human nature dominating every human being. And this law has no exceptions; for should at any time an apparent exception be noted, it will on investigation, like the apparent exceptions to the physical law of gravity, but prove how invariable is the rule. If, then, the assertion that "an almost universal inclination prevails among the working classes to become doctors and lawyers" be true, or indeed but half true, it is for the simplest reason in the world, viz: Because energetic and quick-witted young men in the ranks of the working classes can, by becoming doctors and

lawyers, gratify their desires with less exertion than they would be compelled to put forth in such other pursuits and avocations as are open to them. And just as long as society is constituted as it now is, so that a given *quantum* of exertion devoted to the study and practice of medicine yields, or promises to yield, larger returns than in some other avocations, *so long will the present tendency continue* for men to gravitate from other avenues of gaining repute, respectability and a livelihood into "the business of doctoring"—I trust I may be pardoned the expression.

Germany is probably excelled by no other government in the world in the stringency of its laws regulating admission to the ranks of the medical profession. Not only is the preliminary course of study long and arduous, not only must each aspirant have passed through every successive grade of prescribed preparatory instruction, not only must he have secured the endorsement of some noble university, justly famed for the high standard of learning which its degrees imply; not alone must the aspiring youth devote many years of time and many hundreds of *thalers* to a completion of the course marked out for him by the authority of the State; but in addition to all this, even though the possessor of a university degree, he must finally pass a rigid and awe-inspiring *Staats-examen* before a government licensing board; and then, if successful in this latest ordeal, he is permitted to practice medicine within the confines of the German Empire.

As a consequence of all these stringent requirements, the medical profession of Germany leads the vanguard in the world-wide march of progress in the medical sciences. Such results certainly justify the high standard of qualification requisite for entrance into the medical profession of Germany. But, alas! even in that favored land, whose laws regulating the practice of medicine are exceeded in stringency by those of probably no other government under the sun, we are confronted with the same problem of an overcrowded medical profession, which is harrassing the minds of medical men throughout the confines of our civilization. For, as with us so also in Germany, the same widespread inclination prevails among the working classes to become doctors and lawyers. And, in spite of the highest degree of restrictive legislation which may be deemed possible or even desirable, the ranks of the learned professions are in Germany even more overcrowded than with us, if we may take as a criterion the relative fees and the average professional incomes prevailing in the two countries respectively.

The explanation of this is simple and the cause is not difficult to find. As in the United States, so also in Germany, men seek to gratify their desires with the least exertion. It requires far more exertion in Germany to obtain a license to prac-

tice medicine than is requisite in the United States, *but it is also far more difficult there than with us to earn a living in every other avocation.* And the proposition holds good for Germany, as it does also throughout the civilized world, that, as it becomes increasingly difficult for the average man of average intelligence to earn a satisfactory livelihood in all other avocations, he will lightly turn to the thought of "doctoring," with a view to bettering his condition. And it must in the future continue to be as invariably true as it now is, that so long as "the working classes" find it relatively *more* irksome and laborious to secure the gratification of their desires in other avocations than in the practice of medicine, so long will they persist in overcrowding the medical profession. Laws requiring of students the expenditure of more time and the outlay of greater effort than are now necessary to the acquirement of a license to practice medicine, should undoubtedly be enacted in our country also; because more stringent laws in this direction are manifestly needed in order to elevate the existing standards of qualification for medical practice. But, if I correctly apprehend the drift of the argument put forth in the address of President Garnett, *such laws, if only stringent enough, are also expected to solve the problem under discussion,* and to check the recognized tendency of the working classes to become doctors, by requiring of them *so great* exertion in the attainment of their object as to make them rather content with some other pursuit, less remunerative may be, but also far less burdensome to follow.

Restrictive legislation will not solve this problem. Its solution lies not in restriction but in freedom—freedom on the part of the working classes (including doctors) to produce wealth and secure the satisfactions of their desires by equal privilege of access to the bounties of nature. Let us beware of advocating restrictive legislation of such character as may be calculated to invite public hostility to the medical profession. Let us avoid the suspicion of seeking to build up a close trades-union, a medical guild, a professional trust, a close corporation—seeking our own advantage (it is suspected) at the expense of the public at large. Laws operating in this direction do not, and cannot, afford a solution of the problem, but rather retard its solution. The remedy which we are seeking does not consist in making it *more* difficult for "the working classes" to become doctors, *but in making it less difficult to earn an honest living in all other avocations.*

Whenever our existing taxing laws, which now levy a fine on every product of labor, and which by fining, also restrict every form of wealth production—thereby promoting the poverty of "the working classes" (including doctors)—shall be so amended as to take by taxation for public purposes those values, and those values only, which

pertain to land, irrespective of improvements; and which, being produced by the whole community, should rightfully belong to the people at large; then will every form of wealth production be unfettered, and every citizen be at liberty to earn a living by applying his labor, on equal terms with every other citizen, to nature's inexhaustible store-house of raw materials. And since the power of labor, in transmuting raw materials into wealth, has, in our own generation, been multiplied a thousand-fold by the aid of steam engines and labor-saving machinery; and because nature is lavish of her bounty, and all forms of raw material are practically inexhaustible; it follows that, if all men secure equal privilege of access to nature's inexhaustible stores, the production of wealth in all its forms will be practically limited only by the complete satisfaction of every material desire of the human heart, and the wildest dreams of avarice be more than realized, to the practical benefit of the entire human family without exception. Under such a system of taxing laws involuntary poverty will of necessity be abolished, and every man will be free and untrammelled in earning a livelihood in whatever avocation promises to secure the satisfaction of his desires with the least possible exertion.

And when this practical and far-reaching reform shall have been accomplished, by virtue of a simple change in our existing taxing laws, as I have faith to believe it shortly will be, men will not be tempted to overcrowd the medical profession, at the cost of years of irksome preparatory labor, unless they are constrained to do so by higher and nobler motives than *simply* to gratify their desires with the least exertion. And the enhanced general standard of comfort, and increased ease of earning a livelihood then prevailing among the people at large, when the existing barriers to profitable employment in other avocations shall have all been swept away, will react favorably upon the medical profession also; not only by removing the present incentives to study medicine on the part of those who are better fitted by nature for other pursuits, but by enabling many hundreds of thousands of honest men to pay adequate fees to their family physicians for services rendered, instead of, as now, seeking medical charity for very poverty's sake at some free dispensary.

Then will our problem be finally solved. But a new one of opposite tenor will spring up, a solution of which which will be called for, not by the medical profession, but by the public at large. The problem will then read, not "How shall we prevent unlearned men from gravitating toward the learned professions?" but rather "How shall the pecuniary reward be made sufficiently great, to induce men of talent to devote the years of time and labor needed to qualify them to enter upon the laborious and responsible professions of law and medicine?"

THE TREATMENT OF PELVIC INFLAMMATIONS.

Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Massachusetts Medical Society, Dec. 12, 1888.

BY M. ROSENWASSER, M.D.,
OF CLEVELAND, OHIO.

In the management of cases of chronic pelvic inflammation the accurate diagnosis is a highly essential element, without which the practitioner is entirely at a loss to know what to do and what to leave undone. The differentiation between the various conditions apparently identical to the touch requires a careful review of the history and symptoms, and experienced tactile sense and frequently repeated examinations at various intervals. If a careful examination were made under anæsthesia, in the exaggerated lithotomy position, whenever the diagnosis was not sufficiently clear, many false conclusions could be eliminated. There would then be fewer cases of pelvic exudations treated as uterine displacements by the use of the sound and pessary; the number of uterine fibroids, so gracefully and rapidly dispersed by electrolysis would in a degree diminish, and pelvic cellulitis would be relegated to its proper place in pathology as a phlegmonous inflammation.

If there is any disease in which a difference in treatment based on the social condition of the patient is allowable, it is in these pelvic troubles. The washwoman, the cook, the shop-girl, the seamstress, in short, women dependent for support on their own earnings, will consent to any operative proceeding which promises them speedy relief and the early resumption of the work which alone protects them against a pauper's lot. In these instances the early operation is a boon, and the long-drawn-out treatment under adverse circumstances, an unwarranted makeshift. On the other hand, patients whose resources enable them to carry out strictly the demands of a palliative treatment ought to be made acquainted with this alternative before counselling radical measures, except where such measures are vitally indicated. While many of this class of patients are rendered comfortable from time to time by palliative treatment, and an exceptionally few may be permanently cured, it is to be regretted that some authors, through reports of incomplete cases, mislead the practitioner into the belief that the majority of such cases are curable without resort to surgical interference; that the hot douche, the supporting tampon, the application of iodine, and especially the use of galvanism, are the means by which the congestions are relieved, the adhesions softened and finally absorbed, the displacement rendered accessible to correction, in fact, the patient completely restored to health.

My own experience does not fully agree with this roseate view. The following cases, whose histories will be alluded to in outline only, are

without doubt representative of numerous similar cases under the care of other physicians. They have one characteristic in common, and that is, their long duration, which renders them so much the more typical of the class now under discussion.

Case 1.—Age 30. Married seven years. Mother of one child 6 years old. Consulted me a few months after confinement. Complained of nervous disturbances, severe backache and great weakness, partly due to semi-monthly recurrent menorrhagia. Examination revealed a subinvolved, retroverted uterus with chronic endometritis. The application of iodized phenol and the retention of the uterus in its proper position by a hard rubber pessary relieved the patient. In an unguarded moment, a brood of bacteria found access into the pelvis, causing a subacute pelvic peritonitis. When the patient recovered after an illness lasting four months, we (Dr. G. C. E. Weber being my consultant) found retroverted uterus bound by adhesion, and the ovaries large and exceedingly tender. After the uterus had been freed and replaced, the shortened uterosacral ligaments could be felt as sharp, rigid bands, raising the vaginal vault in corresponding folds. The continuous traction and its reflex results not yielding as rapidly as the patient had hoped, she consulted Dr. T. G. Thomas, of New York, and remained at his private hospital for six weeks, where she underwent some local but mainly general constitutional treatment. She returned improved, but still ailing; she finally became pregnant, and was confined last July. She is now in better health, but is still wearing a pessary, without which she is miserable, and is not yet cured. This being a case of chronic ovaritis with pelvic adhesions, of right belongs to what might be called the border-line between limited and general pelvic peritonitis, and represents the most satisfactory result obtainable by patient, non-surgical therapeutics.

Case 2.—Age 33. Married. Mother of three children, last being 4 years old. Was in good health until three years ago. Gonorrhœal infection progressively traceable from urethra and vagina to uterus and tubes, having caused a moderate pelvic peritonitis. Six weeks after recovery from acute symptoms, examination reveals, besides enlarged and tender ovaries, the presence of a round, smooth, fluctuating movable tumor of the size of a small orange, not specially tender, occupying the right side of the pelvis; examining a few days later only the thickened relaxed walls of the sac formerly filled with fluid could be felt, with increased sensitiveness of the posterior surface and fundus of the uterus. There was at no time after subsidence of the peritonitis any vaginal or uterine discharge, except her normal and moderate menstrual flow; nor was there any elevation of temperature. After the lapse of a few weeks, the tumor would refill and disappear

as before, leaving some sensitiveness posterior to the uterus as high as the fundus. Occasionally a similar tumor would form and vanish on the left side. These recurrences were not connected with the menstrual function. Dr. Weber, consultant in this case also, on one occasion accidentally burst the sac by too strong pressure, but no harm followed. There is no room for doubt that we have here an unique condition of irregular, alternating hydrosalpinx, which discharges its contents into the retro-uterine pouch. The fluid, not acrid enough to inflame, but only to irritate, gradually distends the occluded or highly constricted tube, and by the continually increasing pressure forces its way out either through a narrow angular canal or by rupture at some weak spot, which then is repaired, to be again broken when the sac is filled. The patient is still under observation and occasionally takes to her bed when she feels a new rupture has occurred. She has not been pregnant since her sickness, nor is she likely to be. Whether she will ultimately get well, or at some period require surgical assistance in case of suddenly developing peritonitis, time will tell.

Case 3.—Age 30. Married seven years. Sterile. Menstruation generally profuse. Copious leucorrhœa. Suspected infection. Three years ago, while under another physician's care, she took a severe chill; pelvic peritonitis developed, with formation of abscess in the left side of the pelvis in the course of a few weeks. The abscess burst into the bladder; before the abscess wall had collapsed Dr. Dudley P. Allen, consultant, made a counter opening from the vagina, and thus drained the abscess, which finally healed after a tedious and very painful illness. The patient has been about for a year, but is still a sufferer. There is quite a bunch of induration to the right of the uterus, besides the retracted cicatrix on the left.

Case 4.—Age 45. Married twenty-three years. Sterile. Menstruation irregular, at long intervals. For the past five years afflicted with vague pains in the pelvis and back, with considerable leucorrhœa. The uterus is enlarged, the vaginal vault tender on pressure, but no distinct tumor can be felt. Being otherwise a sufferer from chronic congestion of the liver, she has not laid much stress by her pelvic symptoms. Two years ago she was suddenly seized with violent pains, beginning in the pelvis and spreading rapidly over the entire abdomen. After recovering from the severe general peritonitis of three weeks duration, a large, hard, sensitive mass filled the retro-uterine space. Several weeks later, the patient found she was passing large quantities of offensive purulent material with each defecation. From this time forward she continued improving, but was still far from well. She made a trip to Germany with a letter to Prof. Aug. Martin, of

Berlin, submitting the case to him for operation. In his reply he confirmed the presence of pyosalpinx with communication into the bowel, but had decided first to try the effect of curetting the uterus before undertaking abdominal section. The patient had improved so decidedly upon that treatment that he discharged her as cured. On her return I found her much improved, but the mass posterior to the uterus had not disappeared. During the past summer she was on several occasions compelled to remain in bed for days, once for a fortnight, when the pelvic mass had become tender, and had rendered her unfit to be about. There has been no discharge of pus from the bowel during the past few months.

The last two cases have had a mixed treatment. The former required surgical interference to save her life, for I am convinced she would have died without drainage. I cannot understand the principle underlying Martin's treatment of the latter case. It was only palliative; for he could not expect the diseased tube to become absorbed or permanently drained, nor would the expected menopause have any influence on a pyosalpinx.

I now quote from E. H. Grandin's citation of Mundé, who completes his history of a case of pelvic peritonitis in this wise: "As soon as she was able to come to my office, I recommended the galvanism, and after about a month's treatment she was as well as ever, and was discharged last March, wearing a small, soft-rubber, Albert Smith pessary, which she thought gave her some support in walking. I gave her directions about the continuance of the galvanism, and have not heard from her since. Hence I infer that she is doing well, as she was of the kind of patients who would be sure to let me know if my treatment had not proved effectual." This to justify my assertion that incomplete cases are wrongfully reported as cured.

The results already attained by men prominent in the surgery of the pelvis warrant the belief that early operations in pyosalpinx will become the established rule; that hæmato- and hydrosalpinx must be treated according to the individual indications, expectantly or by removal, if peritonitis repeatedly threatens life or seriously impairs health. When we shall have become as familiar with the after-histories of abdominal sections for ovaritis and pelvic adhesions as we are with the natural history of this variety of pelvic peritonitis, it may become possible to differentiate cases fit for operation from those unsuitable. Such cases are too often discharged from hospitals and completely lost sight of, when it is of the utmost importance to know what benefit finally was resultant from an operation not yet fully conceded to be justifiable.

ERYSIPELAS AND PUERPERAL FEVER.

Read before the Gynecological and Obstetrical Society of Baltimore,
February 12, 1889.

BY ROBERT T. WILSON, M.D.,
OF BALTIMORE.

GYNECOLOGIST TO THE UNION PROTESTANT INFIRMARY; ASSISTANT
SURGEON TO THE HOSPITAL FOR THE WOMEN OF MARYLAND.

The more the study of infectious diseases rules the medicine of the present time, the more our interest is directed toward the relation which the individual diseases bear to each other. Among the infectious diseases which, according to the old ideas, are said to stand in a changeable relation to each other, are erysipelas and puerperal fever. The endeavor has been made to prove clinically the identity of both diseases by pointing to the fact that they appear simultaneously, and still further by showing that puerperal fever is said to be engendered by erysipelas, and *vice versa*, in the case of lying-in women. The views of the identity of both forms of disease are especially furthered by the opinions of Virchow that, anatomically considered, the course of certain forms of puerperal infectious diseases, especially in the cellular tissue of the pelvis, resemble, or indeed are the same, as in erysipelas. There are statements enough in existence which must make us cautious in our practice, but which are always being opposed by a number of observers, and these, though widely differing, assist in proving that there is a connection between erysipelas and septic infection. This subject, which has been treated in a great variety of ways, has made great progress in recent years through the fact that Volkmann (Pitha—Billroth's *Chirurgie*, Erysipelas), lays stress upon the point that erysipelas as a disease, *sui generis*, must be separated just here in the puerperium from the phlegmonous conditions—a view which has already been expressed by others (Hirsch). Hugenberger, from his experience, has endeavored to show that erysipelas in the puerperium only appeared as a dangerous complication and had nothing to do with puerperal fever. We find cases on record in which erysipelas appeared to an alarming extent in lying-in women as well as in other patients—so-called *noso-comial* erysipelas; and further, that septicæmic conditions and pyæmia have been engendered from lying-in women with erysipelas, and *vice versa*; from such lying-in women erysipelas has occurred with other sick persons or with well persons—physicians, nurses, etc.

After the appearance of Hugenberger's communications, A. Gusserow, in the spring of 1879, had under his care a large number of erysipelas cases with lying-in women, while at the same time many cases of puerperal fever appeared in the obstetrical ward of the Charité Hospital. From the course of the cases of *noso-comial* erysipelas (says Gusserow), if we are willing thus to designate the coincidence of nine cases of gen-

uine erysipelas, he (Gusserow) was thoroughly convinced that there existed no connection between puerperal sepsis and erysipelas. The discovery of Fehleisen has made an epoch in the study of erysipelas, and it involuntarily recalls to our recollection (says Gusserow), the question how far erysipelas stands in connection with septic infection in the puerperium. Since through the erysipelas coccus (says Gusserow), the specific principle of erysipelas, the peculiarity of the disease has been so beautifully proven, it seems to me (says Gusserow) that now is the time to emphasize again, from a clinical standpoint, the individuality of erysipelas in the puerperium, and to endeavor to prove that this disease has nothing in common with puerperal sepsis (*Archiv. f. Gynäk.*, vol. xxiv, part 2). Medical literature contains a sufficient number of cases with observations on the course of erysipelas in pregnant women to substantiate this view.

If erysipelas could be easily produced from a lying-in woman who has puerperal fever, the number of observations ought to be very large. But in the literature of this subject the cases on record are by no means large, and those which do exist admit of the supposition that they are not genuine erysipelas, but phlegmonous inflammation whose connection with sepsis is known in those cases (says Gusserow). Puerperal fever, puerperal septicæmia, may be endemic or epidemic. As the symptoms of the affection vary infinitely, so may the epidemics in their severity. Since the first epidemic at the Hotel-Dieu, recorded by Mauriceau and Lamotte, 1664, hardly a year has passed without our being able to refer to an epidemic at one or another place in the different parts of the world. While all authorities agree in regard to the application of the term puerperal fever, the theories of its origin have been innumerable, and to-day there are questions concerning it which it remains for the future to decide. The earliest theory was based on the idea of retention of the lochia, with decomposition of remnants of placenta. This theory started with Hippocrates, and was defended by Galen, Avicenne (1000), Rhodion (1532), Mercatus (1570), Michaelis (1615), Sennert (1631), Sydenham (1682), Hüter (1711), Mauriceau (1712), Burton (1751), Smellie (1752), Tissot (1795), and many others. To this theory succeeded that of the metastasis of the milk, which was first promulgated by Mercurialis and Willis, in 1662, and was advocated, in particular, by Puzos (1743), Lieutand (1750), Levret (1766), Van Swieten, Deleurye (1777), and others. Autenreith formulated his theory in the beginning of this century, which is only a combination of the preceding. His theory was accepted by Schmidt-müller, Carus, Joerg, etc. Then arose the gastro-bilious theory of Trincavellus, which was advocated by Manning, Cooper, Denman, and others.

The fifth theory is the phlogistic; according to

which inflammation is the cause of puerperal fever. According to the site of the inflammatory process, we may have three varieties: 1. A metritis, which may be associated with a phlebitis or a lymphangitis (Plater, 1602, Denman, Tissot, Naegelé, and others). 2. An enteritis and a peritonitis. 3. Peritonitis, pure, the view of Johnston, Hunter, Siebold, Capuron, Baudelocque, and others. Then followed the erysipelatous theory, advocated in particular by Eisenmann, and accepted by Delaroche, Bayrhofer, Gordon, Ingleby, Lee, and numerous English and American authorities; this theory considers puerperal fever an internal erysipelas.

Semmelweis, in 1847 to 1861, promulgated the following theory: Puerperal fever must always be considered as a fever due to the absorption of a decomposed animal organic matter, and, this absorption may result from *auto-infection* (the product of decomposition coming from the individual itself), or from *hetero-infection* (the product of decomposition coming from without). Puerperal fever is not, therefore, a peculiar and exclusive disease of the puerpera. An identical affection, even as has been proved by Trousseau, Schée, Helm, Buhl, Simpson, Tarnier, may be met with in virgins, in the new-born, in wounded of either sex. The point of origin of the disease is found as well in the uterine wound, and in slight superficial wounds of the genital organs, as in lesions of the peri-uterine cellular tissue, or in the vagina. The primitive local disease becomes general through the carrying of the morbid process to the cellular tissue, thus gaining in extent, or else it is transported by the lymph of the blood to all the other organs; or else foreign bodies are carried by the circulation, deposited in different organs, and there become the source of the disease.

The causes of isolated cases, that is to say, of those developing aside from all epidemic influences are:

1. Lesions and wounds of the genital organs.
2. Retention followed by alteration of portions of the placenta or of the membranes.
3. Primitive inflammation of the vagina and of the uterus, such as those caused by gonorrhœa.
4. Finally, infection of wounds of the genital organs by cadaveric emanations, purulent or gangrenous secretions, etc.

Schroeder is a resolute advocate of the theory of Semmelweis. Doléris says: To-day all authorities are in accord in considering puerperal fever as a species of poisoning. The most resolute localists have renounced the view that the disease resides in the lesion itself. The recent investigations of Championnière, Siredey, Quinquaud, Fioupe, Despine, Bode, plead in favor of the absolute similarity of puerperal and of surgical infection. This is the doctrine held in France, and the one stated by Winckel (1878). It is the doctrine admitted *almost* uniformly

throughout the world. In the United States, the belief of *almost* all accoucheurs is certainly in accord with the statements of Charpentier—puerperal fever is septicæmia, differing only from surgical septicæmia in that, superadded to infection, is the puerperal state. The most distinguished exception to this is Prof. Fordyce Barker; he still adheres to the views promulgated by him years ago, and it certainly tends to make every thoughtful man hesitate a trifle in propounding the absolute statement that puerperal fever is *always* simply puerperal septicæmia. In the memorable discussion before the New York Academy of Medicine, in 1884, when Thomas, with all his eloquence, plead for the entire identity of this fever with septicæmia, Barker protested alone against such a broad view, and stated that "his creed to-day is fully avowed in his book on the Puerperal Diseases, and unless in the future he learned new facts and new arguments to change his faith, he should die impenitent." In reference to Thomas' argument, he stated that its pathological doctrines were misleading and dangerous, because they were "super-saturated with septic infection." He (Barker) says that there does exist an epidemic disease differing in all characteristic points from what is known as septicæmia; differing in its origin, its modes of attack, its symptoms, its anatomical lesions. His conviction, therefore, is still that there is such a disease as puerperal fever *sui generis*. Lusk says, surgical fever and puerperal fever are not only analagous, but are essentially one and the same process. Of all who discussed Thomas' paper, only Mundé was inclined to agree in a measure with Barker. Mundé's views are best expressed in his recently published appendix to Cazeaux and Tarnier's Treatise on Obstetrics.

Gallabin holds that a puerperal fever, *sui generis*, may exist. According to Playfair there exists identity between puerperal septicæmia and surgical septicæmia, and there may be either *auto-infection* or *hetero-infection*.

Robert Barnes says, "that there are many points of analogy is undoubted; but there are also points of difference which forbid us to accept the doctrine of identity."

Atthill, Priestly, MacClintock, Macan, Johnston, admit that puerperal fever is only septicæmia, the result of ichoræmia.

Parvin, in his recent work on obstetrics says: "From what is known of so-called puerperal fever, it should not be regarded as a specific disease, and strictly speaking, there is no puerperal fever, that which is so denominated being a febrile affection caused by the entrance into the system of a poison from without, the nature of which we do not know, the entrance taking place through a wound of the uterus or of some part of the vulvo-vaginal canal."

Fortunately for the women, our treatment of

the disease is to-day more certain than our theory as to its origin, and if in the future a better explanation of the cause is offered than at present acceptable to the majority of accoucheurs, we do not hope for much change in the generally accepted treatment.

A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER.

BY J. F. JENKINS, M.D.,
OF TUCUMSEH, MICH.

James Muir, æt. 42 years, a shoemaker by occupation, had been complaining of pain in the region of the liver and stomach for upwards of two weeks previous to calling a physician. Dr. Geo. Howell, who attended him during the last week of his illness, and with whom I was called in consultation, gave the following history of the case: Upon examination, the patient's pulse ranged between 50 and 60 until within a few hours of his death, when it exceeded 100 per minute. The skin was jaundiced. The temperature never exceeded 100° F., and within a few hours of his death it was natural. There was slight nausea, but during the last week of his illness the patient neither complained of pain in the region of liver or stomach. The area of dulness over the liver rapidly decreased, so that its lower border could not be detected upon the most careful examination when the writer was called in consultation, which took place about seven hours previous to the death of the patient. At no time did he complain of headache, or pain in any portion of the head. There was a tendency to stupor during the last week of his sickness, but up to twenty-four hours of his death (which took place March 10, 1889,) he could be easily aroused and would answer questions rationally. During the course of the night previous to his death the patient vomited up a pint or more of dark grumous blood, looking very much like that which is described as the black vomit of yellow fever. The stupor then became more profound, the pupils of the eyes were largely dilated, there being marked oscillation of the eyeballs from within outwards and taking place within a certain degree of regularity, averaging about ten times per minute and continuing within a short period of his death.

A post-mortem examination was made by Dr. Howell in the presence of several physicians, about twenty hours after death. An incision was made, exposing to view the stomach, bowels and liver, showing that the latter organ was from one-third to one-half its normal size. Its upper surface was pale in color, studded here and there with patches having the appearance of rhubarb in color. The fluid in the organ was darker and thicker than natural. No microscopical exami-

nation was made. The stomach and spleen apparently were in a healthy condition. The kidneys were slightly enlarged. A short distance from the entrance of the gall duct into the duodenum was found an old ulcer partially healed, and which appeared to have no significance relative to the disease of the liver.

Remarks.—All modern writers agree that acute yellow atrophy is a rare disease. Strümpell states in his late work, that about 200 cases are recorded. Its etiology is somewhat doubtful. In the above case, the man was of temperate habits, and was not given to excesses of any kind.

REPORT OF A CASE OF GONORRHOEA WITH PURPURA RHEUMATICA.

BY W. A. PHILLIPS, PH.B., M.D.,
OF EVANSTON, ILL.

The occurrence of purpura as a complication of gonorrhœal rheumatism has been noted so seldom that I report the following case:

March 2. Mr. B., æt. 19, milkman, with a previous history of chronic gonorrhœa, has had an acute exacerbation since February 8; also an efflorescence on lower extremities since February 26; also pain and swelling of several joints, March 2.

On examination: penis cedematous; purulent discharge from urethra, containing gonococci; inguinal lymph glands swollen spindle-shaped. A symmetrically distributed efflorescence of anterior and inner aspect of leg, and inner aspect of thighs extending into gluteal regions; over left ankle, the most troublesome joint, skin thickly covered; also upper extremities present a limited number about the wrists; rest of body free. The great majority of the lesions macular, some slightly elevated, of definite, irregularly circular outlines; sizes varying from pin-head to one-cent piece in area; in color a deep bluish-red, not changing on pressure, a few of the larger and elevated ones changing at their edges on pressure, the uniformly deep color of their greater extent remaining. One large macule annular, others with small papules marking their centres. Between the larger and elevated spots great numbers of the smaller macules, some brighter red, others of the more prevalent bluish-red. No evidence of itching. *Joints:* Ankles swollen, left more than right; similar symptoms on the part of wrists, also metacarpal joints of both hands; parts in neighborhood of affected joints cedematous. No fluctuation. Temperature normal.

March 5. Ankles free, knees swollen and painful, left more than right. Prepuce cedematous, anteriorly a large macule, posteriorly a nodular body size of pea. Temp. normal. Photographed.

March 12. Sudden appearance of great numbers of wheals on lower extremities, varying in

size from that of a pea to the area of a silver half dollar; some bright red, not changing on pressure, others rose red fading on pressure, others colorless. No itching. Temp. normal. Older efflorescence brown, yellow.

March 13. Wheals had all vanished, leaving many fresh macules, largest of the size of a silver quarter. No change of symptoms had accompanied fresh outbreak. Exciting cause not determined. Joints nearly free. Patient states that he bled freely from a slight wound of right hand.

March 20. Joints free; color of efflorescence varying from brown to yellow. Urethral discharge, mainly mucus, slight. Urine contains many tripperfaden.

Remarks.—Thoracic and abdominal organs negative, also the mucous membranes, except urethral. There was no previous history of rheumatism. The majority of the skin lesions were purely of a hæmorrhagic nature. Some individual lesions were of the character of erythema nodosum. The fresh crop of March 12, purpura urticans.

REPORTS FROM HOSPITALS.

SURGICAL CLINICS AT THE WESTERN PENNSYLVANIA HOSPITAL, BEFORE THE STUDENTS OF THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

BY PROFESSOR J. B. MURDOCH,

SURGEON TO THE WESTERN PENNSYLVANIA HOSPITAL AND PROFESSOR OF CLINICAL SURGERY IN THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

[Reported by WILL. N. PRINGLE, M.D., a member of the Graduating Class.]

October 6, 1888.

EXCISION OF THE KNEE-JOINT.

We show you to-day the patient on whom we did the excision of the knee-joint one week ago to-day. The dressings have not been disturbed since, and we bring him in here to re-dress his wound, that you may learn the *modus operandi* of changing the dressings of wounds. Now, in doing this, all the antiseptic precautions will be observed that were observed in the original operation. A wound like this is different from one made by the surgeon's knife. You remember this joint was a foul suppurating cavity, filled with pus. The poisonous germs were already there in great profusion. A wound made in sound tissue, by a surgeon's knife, if he be careful, may never become septic; the poisonous germs may never secure a lodgment in it, and it is in wounds like this before us that we frequently fail, because we are not careful enough in our management of them. Now that the dressing is removed from this wound, you see no evidence of suppuration in it;

these drainage tubes which have been in for a week are perfectly clean, so that we are not likely to fail in this case at least. These dressings might have been allowed to remain on for three weeks had it not been necessary to remove the drainage tubes. After a drainage tube has remained in a wound three or four days it has accomplished its purpose, and becomes foreign matter, and should be removed. In dressing a wound do not lay the first cloths or gauze on in straight flat layers, but rather loose, fluffy, or bunched; it absorbs much better than when laid flat. We next apply absorbent cotton and dress as before, taking care to apply enough absorbents to take up all the blood and serum that may exude. Whenever the discharge begins to show itself through the dressings, they should be removed at once, and the defect remedied. This man will now be returned to bed and his dressings will not be disturbed again for two weeks; unless pain or rise in temperature indicate that mischief is going on in the wound. You can see by his temperature chart that on the day of the operation his temperature rose to $101\frac{3}{4}^{\circ}$, and the next morning it had fallen to 99° , and in the evening arose to 101° . Since that time it has remained below 100° . You will see more of this man later on in the course.

ENLARGEMENT OF THE SCROTUM.

We have here another case which we will show you, a case of enlargement of the scrotum. Now there are various causes for enlargement of the scrotum, or many things that may be the cause of this state of affairs, and chief among them is hernia, which it is important to diagnose at once, when it is present; and in order to show you how to do it we will make a list of the conditions that might cause this enlargement. The following are some such conditions: Varicocele, hydrocele, enlarged testicle, hernia, orchitis, epididymitis, cystic disease, cancer, tubercle.

Now, varicocele is diagnosed by a peculiar knotty feeling of the contents of the scrotum, likened by somebody to the feel of a handful of fishworms. As I do not find any such feeling here, I erase varicocele. Hydrocele is diagnosed by its symmetrical, ovoid shape, and a translucency when held before a strong light; as these points are absent, we erase hydrocele. And as I can easily detect both testicles, and as they are of normal size and consistency, we exclude enlarged testicle, with all its causes. Now that all the other causes have been eliminated, we have diagnosed hernia, and as I can trace the mass up the inguinal canal to the internal ring, our diagnosis is verified. This is called differential diagnosis. This man was sent here for operation, and we had hoped to be able to do the operation for the radical cure of hernia, in your presence to-day; but since he has been in the hospital he refuses

to have an operation performed, and in this country when a patient refuses to have an operation performed we dare not do it, even if the country has to support the patient.

In the operation for the radical cure of hernia an incision is made from the internal abdominal ring down, well on to the scrotum; the protruded parts are returned to the abdominal cavity; a purse-string, catgut ligature is passed around the neck of the sac, which is then cut off and removed; the stump is placed within the abdomen and the internal ring closed with sutures. This is the operation in outline, and it is usually successful.

DOUBLE FRACTURE OF THE FEMUR.

Here is another poor man from Coal Bluff. While at his work in the mines last night a large amount of coal fell on him, injuring him, but how severely we know not, as we have not examined him yet, but will proceed to do so at once. You observe as he lays on his back that both limbs are everted, and some deformity above the left knee. Measurement in this case can afford us no information, because, both limbs being injured, we have no data from which to calculate. I will therefore raise the right limb, and by manipulating it I find a false point of motion about the middle of the right femur, which is plainly visible to you all, and although I fail completely to obtain crepitus, I still have sufficient evidence on which to base a diagnosis of fracture of the femur. Now, in manipulating the left leg, I am able to find a false point of motion, and to elicit crepitus, just above the condyles of the knee. We therefore have a double fracture of the femurs in this case; the fact that we get crepitus in the one case and not in the other, can be explained by the fact that in some fractures the bones glide past, or overlap each other, which is the case here. This overlapping is caused by the contraction of the muscles, which is sometimes overcome with great difficulty, and sometimes is never overcome. In regard to the treatment of fractures of the femur, you all know that formerly there was a great variety, but the almost universal method now of treatment is by extension and counter-extension; this, in old times, was accomplished by a long splint, and a perineal band. The perineal band was a great annoyance to the patient, for in passing around the perinæum it almost always irritated the parts, causing numerous ulcerations and sores.

In these days, and in this institution, extension is made by the weight and pulley, which represents the extension, and by raising the foot of the bed we get the counter-extension. This raising of the foot of the bed to get counter-extension has done away with the perineal band; it has also done away with a world of suffering for the patient. This is an American invention, and simple as it may seem it is entitled to con-

siderable praise in the treatment of fractures of the femur. The use of plasters for attaching the weight to the leg is also an American invention. And I may say right here, that to American surgeons is due the honor for more inventions, and better appliances in the treatment of fractures, than to the surgeons of any country on the face of the globe. As the skin is intact in this case we need not be so careful to observe antiseptic measures as we would were the skin broken. The probabilities are that this man will be one-fourth to one-half inch shorter than he was before this accident, as it is hardly possible that the strong femoral muscles can be drawn out to their full length; and I would say here, that it is always well to thoroughly anæsthetise the patient before trying to do this; for the double purpose of relieving the pain, and relaxing the muscle. There are always three things necessary in the treatment of fractures of the femur, viz: Extension and counter-extension, and the holding of the parts in position, or the preventing of the foot from becoming everted. The two former indications have been explained to you, and the latter is obtained in various ways; some surgeons lay a sand bag along the outer side of the leg, and to obtain the same result we use the splint, invented by Dr. Frank Hamilton, of New York (an American surgeon, too, by-the-way).

When plasters are applied directly to the skin, the mole-skin plaster should always be used, as the ordinary rubber plaster usually blisters the skin. When plasters are made to encircle a limb, they should be cut, or divided at one or more points, so as not to constrict or strangle the circulation of the limb; and where it can be avoided, plasters should not be put in contact with the malleoli, as they are likely to irritate them. For the left leg I will use a Volkmann's slide, which is a somewhat different apparatus, as you see, and one which I have used a great many times, and with good satisfaction generally. For the first few days a weight of about eight pounds will be heavy enough for this limb; after that it may bear twelve to fifteen pounds, and I have used as high as twenty-eight pounds; however, this is about the extreme, about twelve pounds being the average.

Now as to the bed. The bed for this man should be flat, and hard, a hair mattress being about the best, and he will have to lay on his back for several weeks. I find on examination that besides the fracture of both femurs this man has also a fracture of the clavicle on the right side; and now as the best treatment for a fracture of the clavicle is the recumbent position, on the back, in bed, and as this man is compelled to assume just this position for some time, no other treatment will be required for his fractured clavicle. In cases where more than this is required a compress may be placed on the back between the

scapulæ, and the weight of the shoulders will usually be sufficient to bring the fragments into apposition; if not, bags of shot may be laid on each shoulder to further increase their weight. This man will now be removed to the ward, and those of the students who wish may go to the ward and see the weight and pulleys applied.

FRACTURE OF THE CLAVICLE.

The next case we will show you is that of fracture of the clavicle, and as you are now studying fractures, this is a case that I am very glad to have to show you to-day. As you know, fracture of the clavicle occurs from violence, direct or indirect, and this is one occurring from indirect violence. This man fell from a scaffold yesterday morning, and lay unconscious till last night, when it was found that he had sustained this injury, together with other bruises and contusions about his body. As he stands before you now you will notice some deformity; the left shoulder droops, or hangs lower than the right, and in measuring from the sternal notch to the acromion process on the left side, I find that it measures $9\frac{1}{2}$ inches, and on the right side $10\frac{1}{2}$ inches, and, as you can see, the left shoulder also approaches the median line. This is caused by the fractured ends of the left clavicle slipping past, or overlapping each other. These signs, of themselves, would be sufficient for diagnosis, but besides these we have pain, loss of function, false point of motion, history of the accident, and might, if we tried, be able to elicit crepitus; so you see the diagnosis is easy enough in this case. Now the indications for treatment in this case, as indeed in all cases of fracture of the clavicle, are to raise the shoulder up and draw it backward, which is easiest done by confining the patient to bed on his back, with a compress between his scapulæ. But patients will not always submit to this treatment; so other arrangements must be made. In this case I will make use of Dr. Sayre's apparatus, which is simple, always obtainable, and easy of application. It consists first of a pad in the axilla of the injured side, then sew a strip of adhesive plaster about four inches wide, around the arm, draw the elbow to the side of the chest and backward, by passing the adhesive plaster around the back to the opposite side. Then place the hand of the injured side on the sound shoulder, take another adhesive strip, four inches wide and four feet long, cut a small slit in the centre, place the elbow in the slit in the centre, and pass the two ends up to meet on top of the sound shoulder. The anterior end will cover the forearm of the injured side, and retain the hand of the injured side on the sound shoulder. These strips should act as a sling, to raise the injured shoulder and support it in place. Two skin surfaces should never be allowed to remain in contact, so I will place cotton batting

between the arm and the breast. This constitutes Dr. Sayre's dressing for fractured clavicle. Where you are not prepared with plasters to put on this dressing, you may make a very good substitute by making an ordinary four-tailed bandage with a slit in the centre, in which you will place the elbow; then pass two of the tails around the body, confining the elbow to the side, over a pad in the axilla, pass the two remaining tails up over the sound shoulder, drawing it well up, supporting the injured arm. This makes a very good and a very cheap dressing, and fulfils all of the indications for which such dressings are applied. The clavicle is broken oftener than any other bone in the body, and, as in this case, almost always by indirect violence. The weight of the body at one end and the ground at the other, are usually the two forces acting upon the bone, which fractures at its weakest point, which is usually at the junction of the middle with the outer third. This accident frequently happens to babes and small children, from falling from their carriages and chairs. In children it is not a very formidable accident, as it usually heals kindly.

FISTULA IN ANO.

Through the courtesy of Professor McCann, we have another case to show you. It is one of fistula in ano. We place him at once in the lithotomy position, as you see, and the opening is at once exposed to view. A fistula, as you know, may be complete or incomplete. A complete fistula is one with two openings; one external, and one internal opening into the rectum. An incomplete fistula is one with but a single opening, and it may be either internal or external. I will try to pass a grooved director through this opening. In doing this you should always remember that we frequently fail to find the internal opening, and that this is frequently because we search too high up. As you see, I find the internal opening just inside the sphincter, and this is the location where it is usually found. I will incise the part that lies over the director, which constitutes the operation. The wound will now be dressed with iodoform gauze, and the patient kept quiet in bed for a few days, and an effort made to make the wound heal from the bottom.

FRACTURE OF BOTH FEMURS.

We have one more case to show you to-day; that on which I dressed a fracture of each femur three weeks ago. You see we already have a considerable amount of union here, as the man can roll both legs in either direction. I will now do what I would advise you all to do under like circumstances, viz.: to apply a plaster of Paris dressing. Up until within a year or two ago it was my rule to treat fractures of the femur with plaster of Paris bandage from the beginning, but I have about abandoned that practice here for the reason that

it interferes with making extension, and also because, after plaster is applied, every part of the wound is completely concealed from view, and we cannot readily ascertain the amount of progress being made by the reparative process, or whether the bones remain in apposition or not. For these, together with other reasons, we do not put on a plaster dressing until after slight union has taken place. There are various ways of applying this dressing. The plaster should not come in contact with the skin, and to prevent it we use various articles, as blankets, cotton batting, Canton flannel, or tight-fitting drawers, but for fractures below the knee, I prefer an ordinary stocking. In applying plaster dressings all bony prominences must be carefully protected by a layer or two of cotton batting. The points to be especially protected are the condyles of the femur, the spine of the tibia, and the malleoli. At the point of fracture reinforcements should be made by a few extra wraps of the plaster bandage. In the groin also, where counter-extension is to be made, we must be careful to protect the parts with cotton. We then start at the foot, and apply the bandage smoothly and evenly the entire length of the leg, making extra wraps at the point of fracture.

MEDICAL PROGRESS.

GLYCERINE SUPPOSITORIES.—POLUBINSKY concludes the eccoprotic action of the drug cannot possibly be attributed to anything like its softening or liquefying fecal masses, since (a) water, milk, olive oil, and other fluids, when injected into the rectum in similarly small quantities (6 grams or so) fail to excite any motions; (b) when injected in such trifling doses, glycerine is rapidly absorbed by the mucous membrane; (c) stools occurring after glycerine enemata are usually solid and sausage-shaped—that is, show no signs of liquefaction; (d) neither are the masses covered with any watery or slimy layer; (e) stools take place within a short time after the administration of glycerine, while the liquefaction process should necessarily require a comparatively long interval. 2. Glycerine undoubtedly causes a local irritation (probably congestion) of the rectal mucous membrane, since (a) all patients experience a sensation of warmth or some burning in the rectum; (b) there is observed a slight rise of the rectal temperature after the enemata; and (c) on a digital exploration during “calls” there are detected fairly strong contractions in the upper portion of the rectum. The drug, however, does not increase the secretion of the rectal mucous membrane. 3. The irritation lasts until a complete absorption of glycerine. Possessing a great absorbability, the substance very rapidly penetrates into the (very rich) lymphatic

vessels of the rectum, and, having disappeared from the latter, ceases to act. Hence it is unable to establish any considerable peristaltic action of the bowel lying higher up from the sigmoid intestine.

1. Best results are obtained from glycerine in cases of fecal accumulation in the rectum and S. Romanum. 2. In cases of fecal stagnation occurring higher up (typhlitis, general intestinal catarrh, etc.) the drug is altogether useless. 3. Glycerine enemata or suppositories are indicated especially (a) as a means for “training” the rectum—that is, for exciting regular rectal “calls”—in cases of habitual constipations; (b) in cases of constipation caused by fecal accumulation in the large bowel, and depending upon atonic state of the intestinal muscular coat, as occurring most commonly in women after parturition. Since intestinal atony in such patients is usually accompanied by a similar state of the abdominal press, a systematic employment of glycerine enemata must be obviously supplemented by daily abdominal gymnastics and massage, faradization of the abdominal muscles, and intra-rectal galvanization; (c) in such cases where the rectum and sigmoid bowel are mechanically compressed by pelvic tumors (including early pregnancy); (d) in retroversion of the uterus associated with pressure on the rectum; (e) in children suffering from scrofula of a torpid variety; (f) in such persons who experience difficulty and pain on defecation because of their feces being very hard, and who accordingly often abstain from stools. Here glycerine proves useful mainly as a local lubricant. 4. On the whole, glycerine enemata should be preferred to suppositories, since the latter (a) are more expensive; (b) their use is rather uncleanly (they easily melt in hands, etc.); and (c) their introduction into the rectum by a finger represents a by far more unpleasant procedure than an injection by means of a syringe. 5. In one group of cases, however, suppositories are to be preferred to enemata. It is the group mentioned (sub. 3f) where a relatively slow action is desirable, and where lubricant effects of glycerine are intensified by those of cacao butter.—*London Medical Recorder*, March 20, 1889.

PERIPHERAL NEURITIS DUE TO THE VOMITING OF PREGNANCY.—DR. D. W. WHITFIELD reports the following case in the *London Lancet* of March 30, 1889: Mrs. R., æt. 40, a lady of strictly temperate habits, was delivered of a well-nourished female child at full time on Aug. 7, 1888. This had been her seventh pregnancy. Her previous pregnancies had been unattended with much sickness. During this pregnancy, however, the sickness was troublesome from the first, and it increased as the pregnancy advanced, the skin assuming a most unhealthy, sallow appearance, as if the liver was not acting. She

lost flesh rapidly, but was not confined to her bed until the end of the sixth month, when she had a most severe attack of vomiting, large quantities of bile being vomited up. For about a fortnight hardly anything seemed to be retained, and she became so prostrated that I began to think it would be necessary to induce labor. However, at the end of a fortnight she improved a little, and some water gruel and essence of meat were retained. In another week she was able to sit up a little each day, but still the vomiting never ceased entirely, and until her confinement not a day passed without severe attacks of it. All the usual remedies were tried without much effect. Bismuth seemed to do the most good. She was now able to sit up each day, and was down stairs the day before her confinement. A fortnight previously, however, she felt her legs cold, and found she was losing the use of them; she had to be assisted up and down the stairs. She had no pain—only the feeling of coldness in the legs; she tried to obtain warmth in them by sitting before the fire, but in vain. Prior to this pregnancy she was a little inclined to stoutness, and I think she lost at least 80 pounds in weight. Labor was quite natural, lasting about five hours. The vomiting ceased the day after, and she began to take nourishment. She had no rise of temperature, the lochia were normal, and it was thought she was doing well. However, after the fourth day she complained of her legs feeling numb, and a few days afterwards of severe pains in them and of “pins-and-needles” in the hands, a burning sensation in the palms, and pains up the arms. She could move her legs slightly in bed, and the wrists did not drop until the twelfth day after confinement. On the thirteenth day we got her out of bed, and it was then I saw the extensive nature of the disease. Dr. Dreschfeld saw her with me on this date, when we found she had almost lost the entire use of both arms and legs. She was unable to bear the slightest weight on her legs, and had difficulty in crossing one over the other. The patellar and other reflexes were absent; both feet were extended and the toes flexed; the hands were dropped, the wrist and fingers were flexed, and she had no power to extend them. She had difficulty in raising herself in bed, and complained of a peculiar numb feeling around the lower part of the abdomen and epigastric region. The breathing fortunately was unaffected. There was pain on pressure over the main nerve trunks in both arms and legs. The cutaneous sensibility varied in different places—increased in some parts, diminished in others. We gave her liq. strychnine, and employed massage, and in about a week she began to improve. The improvement has been slow but continuous, and at the present time, the arms, forearms, thighs, and trunk are almost well, but the hands, legs, and feet are not.

She cannot bear any weight on the feet as yet, although she can flex them and move them about more freely, and power is certainly returning gradually.

Remarks.—Of course peripheral neuritis may come on during any wasting disease, and very rarely after a confinement; but I am not aware of any case having been described which has been due to excessive vomiting during pregnancy. The question is, whether, should the symptoms show themselves during an excessively sick pregnancy, it would not be a sufficient reason for inducing premature labor. In this case the early symptoms were extreme coldness of the lower limbs from the hips downwards, with partial loss of power, followed by a feeling of numbness.

ON THE RELATIONS BETWEEN CHOREA MINOR AND POLYARTHRITIS RHEUMATICA, AND ENDOCARDITIS.—(*Wiener Med. Blätter*, 1888, 41 and 42.) HEGGE (Greifswald) says: It is universally admitted that chorea occurs in connection with polyarthritis and endocarditis; but the supposition that chorea and polyarthritis rheumatica and endocarditis always go together, so that a chorea without a rheumatic affection is unknown, is far from correct. Hegge still adheres to his opinion that a connection between chorea and endocarditis and acute rheumatism of the joints cannot be recognized as universally coincident, and that, in a great majority of chorea cases, the coexistence of heart disease is wanting. Also the publication by Brieger shows that the simultaneous occurrence of both diseases is possible only and really happens. The statements of Hegge show that in the clinic of Greifswald, during the past years, in a large number of chorea cases, the coexistence of rheumatic affections and endocarditis has often been observed. Five cases are reported. The first one recalls the case published by Brieger (*Berl. Klin. Woch.*, 1886, No 10). The second case had often suffered from rheumatism of the joints for a year. At the time of the chorea no palpitation existed, but there was a distinct systolic murmur at the apex, and also a second impure sound. In the third case chorea is said to have been caused by acute rheumatism of the joints which had existed two years before, was entirely cured and showed no tendency to relapse. In the fourth case, during the chorea, an insufficiency of the mitral valves was proven, whilst during the previous polyclinic treatment heart disease had not been found. The fifth case shows a patient who had been treated for chorea three years before, when an insufficiency and stenosis of the mitral valves was noted; the patient finally succumbed to a renewed attack of rheumatism of the joints and of compensatory disturbances. The post-mortem proved the heart disease. Thus these reports also show that chorea may occur in the course of infectious diseases, and that

of the latter polyarthritis rheumatica causes it the most frequently, but that not every chorea must have this "rheumatic diathesis," and even that this occurs only in a minority of cases. At any rate, a chorea must not be ascribed to a rheumatic affection which may have existed years before. Nor is the etiology of chorea uniform.—*Centralblatt für Klinische Medizin*, 1889, No. 13.

ON GASTRITIS MEMBRANACEA AND DIPHTHERIA.—(*Virchow's Archiv*, vol. cxiii, 2.) SMIRNOW had occasion to investigate six cases of so-called diphtheria of the stomach, in which the disease had developed immediately after diphtheria of the throat, and had been regarded as a continuation of the latter. In four cases, however, he found only a more or less considerable hyperæmia and extravasation without much cellular infiltration, a more or less extensive desquamation of the glandular epithelium (which had, however, retained its normal qualities), and membranes that could be regarded only as fibrinous, muco-fibrinous and fibrino-purulent. Furthermore, the connection between the membranes and the underlying tissue was everywhere such that the boundary line between them remained for the most part distinctly visible.

The author thinks that, in view of these anatomical conditions, the cases should be called fibrinous inflammation rather than diphtheria proper. In the two other cases there existed acute changes of a diphtheritic character, especially in the epithelium of the glands, such as in diphtheria is known as hyaline degeneration. There was enlargement of the cells, disappearance of the nuclei, and transformation of the cells into glittering homogeneous clots which subsequently melted together and formed the framework of the membrane; and combined with this there was necrosis of the connective tissue of the mucosa itself, so that there could be no doubt but that the disease was a genuine diphtheria, though only in its incipient stages.

From the investigation of the last two cases the author establishes the course of the changes in genuine diphtheria, in opposition to Oertel, as follows: 1. That the process does not begin with an inflammation, but with a necrosis of the pre-formed tissue which takes place with the formation of hyaline products. 2. These products furnish the principal material for the development of the membranes in the first stage. 3. Where inflammatory changes were observed in diphtheria of the throat, it was secondary to the degeneration and belonged to the period of reaction.—*Centralblatt für Klinische Medizin*, 1889, No. 13.

ON INTESTINO-PERITONEAL SEPTICÆMIA.—VERCHÈRE (*Revue de Chir.*, 1888, No. 7), justly declares that the name peritonitis is still wrongly used, and that under it, often, diseases are com-

prised which ought to be assigned an independent position. Among these he counts a complex of symptoms often observed after penetrating injuries to the abdomen, and after laparotomies, which consist of meteorism, more or less complete constipation, vomiting of gall or fæces with normal temperature and small pulse. Such cases he would like to designate as intestino-peritoneal septicæmia. The post-mortem in cases with the above symptoms does not show any traces of peritonitis, and the symptoms mentioned are very similar to those observed in strangulation (aside from the circumstance that the course of the latter is generally much more rapid). The author supposes a pseudo-strangulation to be the cause of the disease under discussion, which occurs in injuries to the peritoneum by superficial adhesion of the serous surfaces, eventually also by rupture of a meteorically distended intestine. Death actually ensues from sepsis in consequence of resorption of the substances retained in the intestines, the resorption taking place directly from the mucous membrane, or from the peritoneum, after the intestinal walls have become permeable. According to Verchère treatment ought to be symptomatic. In this respect he distinguishes between the affections just mentioned and the genuine, for which he advocates the most active therapeutic measures.—*Centralblatt für Chirurgie*, 1889, No. 13.

HOW DOES SUSPENSION ACT IN LOCOMOTOR ATAXY?—DR. JULIUS ALTHAUS, in a letter to the *London Lancet*, says: In your journal of March 30, there is an account of a discussion which took place at a recent meeting of the Paris Society of Medicine on the question whether there was any satisfactory explanation of the results obtained in tabes by suspension. No plausible explanation, however, appears to have been forthcoming, and I therefore request your insertion of the following lines, in which I will attempt to account for the striking therapeutical effects which are obtained here as elsewhere by the use of suspension in such cases.

1. It has been ascertained that in tabes posterior spinal meningitis habitually accompanies the pathological changes in the nerve tubes of the posterior columns. The pia mater is found congested and thickened at the level of the posterior columns, the spinal fluid being unduly increased, and this change being more pronounced in the dorso-lumbar than in the cervical region of the cord. Now I maintain that the good effects which are sometimes obtained by cauterization of the spine in such cases are rather owing to its revulsive influence on the meningitic process than on the sclerosis of the nerve tubes; and it appears to me highly probable that part of the influence of suspension, by which the spinal cord is efficiently stretched, is owing to the *breaking down of adhesions from chronic meningitis*, thus

allowing a freer transmission of nervous influence along the nerve tubes, more especially those which run on the surface of the posterior columns. This explanation appears to me also to account for the fact that suspension acts better in advanced than in fresh cases of locomotor ataxy. In recent cases there is more tendency to inflammatory irritation, which may be made worse by stretching, just as recent cases of disease of the joints, tendons, ligaments, etc., are improved by rest, and old cases by forcible extension.

2. The morbid process in the posterior columns and nerve roots consists essentially of destruction of the medullary sheath and the axis cylinder of the central nerve tubes, together with overgrowth of the interstitial connective tissue or neuroglia which cements the nerve fibres. The neuroglia, from being originally soft and yielding, gradually, as the disease progresses, loses its cells and nuclei, becomes firm, hard, and fibrous, and is liable to cicatricial shrinking. The gradual contraction of this tissue causes compression and squeezing of the central nerve tubes, and thus serves to impair their nutrition and conductivity. Now it seems to me allowable to assume that, by the process of stretching the spinal cord, *the overgrown and unduly hardened neuroglia may be loosened and broken down*, with the effect that those nerve tubes which have, to some extent, survived the sclerotic process are freed from compression, become better nourished, and may thus be enabled to transmit the nervous influence more efficiently than before. Apart from this, however, I have come to the conclusion that suspension has, in a number of cases, a beneficial influence on the medulla oblongata, as it stimulates the centres for vaso-motor and cardiac action and for digestion. In several patients whom I have submitted to this treatment, I have noticed that the pulse, which was unduly quick and of low tension before they were suspended, fell by six or eight beats, and acquired more tension after they had been taken down. In a large majority of my cases the appetite and digestion have improved, and mental depression has been lessened or removed.

The forms of nervous disease for which my personal experience leads me to think that suspension is applicable are the following: 1. Locomotor ataxy in the second stage. 2. Paralysis agitans. 3. Spastic spinal paralysis. 4. Amyotrophic lateral sclerosis. 5. Functional nerve prostration, more especially where there is feeble action of the heart; loss of appetite; and severe mental depression.

SYPHILITIC FEVER RESEMBLING TERTIAN AGUE.—DR. SIDNEY PHILLIPS, at a recent meeting of the Medical Society of London, reported the following case: A woman, æt. 27, a cabman's wife, with a healthy previous history,

married in 1879; six months later her hair commenced to fall out, she had ulceration of the tongue and sore throat. Her first three pregnancies ended in miscarriages, she then bore four healthy children, and these were followed by another miscarriage. One of the children had died of whooping-cough, the others remained well. The husband had had syphilis six months before marriage, but the wife had not shown evidence of primary sore. In May, 1888, she was attacked with fever, accompanied by shivering and sweating, the attacks at first recurred every day and then on alternate days. Ten days after her admission to hospital quinine was administered in 2-grain doses three times a day, and then 5 grains were given before the expected pyrexial attack. This at first checked the height of the temperature curve, but afterwards lost its effect, and an increased dose did not improve matters. At length iodide of potassium and mercury were given, which not only reduced the temperature, but also relieved the distressing headache and vomiting which had been present. The differential diagnosis from Hodgkin's disease, typhoid fever, tuberculosis, ulcerative endocarditis, pyæmia, and malaria was discussed. The question whether the pyrexia was associated with a local syphilitic lesion was raised, but no localizing evidence could be obtained. Erythema nodosum was present, and apart from syphilis it was rare to find this accompanied by fever. John Hunter and Fournier had described cases of syphilitic fever similar to that brought forward, but none so late as the ninth year after infection. These rare varieties of specific tertian fever occurred usually in females; the long duration of the pyrexia (eight months) was also a matter of interest.—*Lancet*, April 13, 1889.

A CHEMICAL VACCINE FOR CHOLERA.—DR. YVERT has submitted to the Academy an interesting treatise: "A new curative and prophylactic treatment for Asiatic cholera. Bichloride of mercury considered as an anti-cholera vaccine." The author says: "I have had, during my recent stay in Tonkin, occasion to observe and treat a large number of cases of Asiatic cholera. The mortality in this part of Asia averages as in Europe 66 per cent. Of forty-five patients whom I treated with bichloride of mercury in doses varying between 0.02 and 0.04 gr. within twenty-four hours, I lost only nine *i.e.*, about 20 per cent. As this result proved to me that the mercury had a decided effect upon the pathogenic agent of the disease, I used it prophylactically for patients who had recently arrived in a region infected with cholera. Of those who were thus treated not one was taken with the disease."

M. Léon Cotin, in presenting the above memorial to the Academy, says: "This new treatment is not a mere fancy; the author who

was the medical chief of a post in Tonkin invaded with cholera, claiming not only to have cured, but to have prevented the infection by the administering of the liqueur van Swieten, the Academy will doubtless agree with me that this work merits an especial investigation, and will order its reference to the committee on epidemics." *Journal d'Hygiène*, Vol. xiv, No. 646.

ANTIPYRIN IN LABOR.—DR. ERMANN PINZANI recently made a communication to the Società Medico-Chirurgica di Bologna, in which he gave an account of some experiments he had made with the view of ascertaining the effect of antipyrin on the strength of the uterine contractions in labor. Two series of experiments were made. In five cases he simply kept his hand on the woman's abdomen for some hours, and noted the condition of the uterus before and after the administration of the drug. In eight other cases (on which he made in all twenty-three experiments) he passed an india-rubber ball, first disinfected, and then filled with a watery solution of corrosive sublimate, into the uterus; this he connected with a manometer, which gave him an accurate gauge of the pressure exerted by uterine contractions on the fluid in the ball. Dr. Pinzani was careful to exclude irritation of the uterus by the foreign body as a source of fallacy by previously warming the fluid in the ball to the temperature of the body, and by waiting for some time after its introduction before making observations. In the first set of experiments, 3-gram doses of antipyrin were given by the mouth; in the second, the doses were from one to two grams. Dr. Pinzani came to the conclusion that antipyrin relieves the pains of labor simply by lessening the force of the uterine contractions. The effect of the drug showed itself in about two hours after hypodermic injection, and four or five after administration by the mouth. He noticed that infants suckled by women who had had antipyrin given them during labor were apt to suffer from diarrhoea. Dr. Pinzani's verdict is, therefore, decidedly against the use of antipyrin in midwifery practice. — *The British Medical Journal*, March 9, 1889.

HEPATIC ABSCESS BURSTING INTO THE PERICARDIUM.—DR. JOAQUIN L. JACOBSEN, of Havana, reports a case in which an abscess of the liver, which was not recognized during life, was found after death to have burst into the pericardium. The complication is so rare that Dr. Jacobsen has been able to find only ten cases previously recorded. The patient was a white man, æt. 39, who had been a heavy drinker, and had suffered from malaria. He had been troubled for about a year with dyspeptic symptoms. He was pale and slightly jaundiced, and had lost flesh. Both the liver and the spleen were enlarged, and there was some tympanites. He

complained of constant pain, sometimes referred to the epigastrium, sometimes to other parts of the abdomen. Percussion in the epigastric region caused a little pain, but gave a normally resonant note. He was treated with purgatives and alkalies, and a blister to the epigastrium. The enlargement in the region of the liver increased, but no fluctuation could be detected, and there were no signs of adhesion. Symptoms of intestinal obstruction came on soon afterwards, with marked tympanites and dyspnoea, and three days after the commencement of this new phase of his illness the patient died. At the necropsy the lungs were found contracted and pushed towards the posterior and upper part of the thorax; the parietal layer of the diaphragmatic pleura was thickened and congested; the pericardium, which was also thickened, contained a large amount of sero-purulent fluid, dark-yellow in color; the outer surface of the heart, which was rough and granular, was of the same color. At the lower part of the pericardium, slightly to the left of the middle line, there was an opening with ragged edges, about four centimetres in diameter, passing through the diaphragm and communicating with an irregular opening in the posterior part of the convex surface of the left lobe of the liver. For some distance round this opening there were firm adhesions to the diaphragm. The liver was enlarged and somewhat hardened; its right lobe was congested, and in the left there was a large cavity measuring 12 centimetres in the transverse by 10 in the vertical and antero-posterior diameters, and full of yellow pus. The spleen, which was enlarged and softened, presented two large milky-looking patches on its outersurface. The gastro-intestinal mucous membrane was thickened and injected. All the other organs were healthy. Dr. Jacobsen points out that the abscess was in the posterior part of the liver, leaving a considerable portion of the front part of the left lobe untouched, while the symptoms did not clearly indicate any affection of the liver beyond what was consistent with the patient's gastro-intestinal disorder and alcoholic antecedents. Exploratory puncture could hardly have been successful even if it had been thought justifiable. — *British Med. Jour.*, March 16, 1889.

CURE OF A CASE OF MORBUS BASEDOWII THROUGH IMPROVEMENT OF A NOSE TROUBLE.—HOPMAN (*Berl. Klin. Wochenschrift*, 1888, No. 42), found in a patient suffering from rhinopharyngitis sicca with extensive crust formations in the nose and pharynx, exophthalmos, especially on the right side, considerable stenocardia and general feeling of weakness, which symptoms led him to suppose an incomplete form of morbus basedowii. Through appropriate treatment of the nose trouble the morbus basedowii was cured. — *Centralblatt für Klinische Medizin*, 1889, No. 13.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00

SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, MAY 4, 1889.

ETIOLOGY OF PULMONARY PHTHISIS.

The recent comments in THE JOURNAL concerning the best climate for consumptive patients, and the necessity for careful discrimination in regard to the extent and stage of progress of the pulmonary disease, as well as to the special qualities of climate, have called forth a letter from DR. HENRY B. BAKER, Secretary of the Michigan State Board of Health, which will be found in this number of THE JOURNAL under the head of "Domestic Correspondence." The letter calls our attention to his paper read in the Section of Climatology and Demography of the International Medical Congress in Washington, D. C., 1887, in which he claims that dry cold air exerts a controlling influence in the production of all the inflammatory affections of the respiratory passages and parenchyma of the lungs, including pulmonary phthisis.

The facts, statistics and diagrams contained in his paper constitute a valuable contribution, and so far as they relate to the prevalence of coryza, influenza, bronchitis and pneumonia, chiefly during the coldest part of the year, they are in entire harmony with the facts and deductions contained in the valuable monograph on "The Climate of the United States and its Influence on the Prevalence of Diseases," by Samuel Forrey, and in the large work of Daniel Drake published near the middle of the present century, and works of many other writers. While the accumulation of facts abundantly prove that in this country more deaths result from pneumonia and the strictly inflamma-

tory affections of the air passages, annually, during the months of January, February, March and April, than in all the other months of the year, the same rule does not apply, however, except in a very limited degree, to pulmonary phthisis. This is proved by the tables adduced by Dr. Baker himself. His table 10 gives the average deaths per week from phthisis in London for thirty years, from 1845 to 1874, showing the highest average in any one month 162, for April, and the lowest 132, for September; and his table 11, showing the average percentage of sickness from phthisis in Michigan for nine years, from 1878-1886, gives the highest average for any one month 70, in April, and the lowest 61, in August. Doubtless, if the diagnosis between true tubercular phthisis and chronic interstitial pneumonia (catarrhal phthisis) had been made, which was not the case in these tables, the comparatively small excess for the months of March and April would have been found resulting entirely from the latter form of disease, leaving the true tubercular disease very equally distributed throughout the year. Another fact fully established is, that tuberculosis originates far more frequently among those classes in any community that are most confined within doors, in the most damp and badly ventilated dwellings, instead of among those most exposed to cold dry air. Dr. Henry I. Bowditch, many years since, established, by a careful examination of the records of mortality from phthisis for a series of years in the various school districts of Massachusetts, the fact that the highest ratio of its prevalence and fatality was uniformly in the districts having most dampness or water in the surface soil, and consequently the greatest amount of aqueous vapor in the atmosphere.

The topic of most particular interest in the paper by Dr. Baker, is, his theory of the production of bronchitis, pneumonia, phthisis, etc., by the inhalation of very cold and dry air. He states "that the breathing of cold air (which is always dry air, because cold air cannot contain much moisture) dries the throat and air-passages, that this leaves in the throat and air-passages salts of the blood, which do not evaporate with the moisture; that the albuminous parts of the blood, which do not pass out of the blood-vessels under other circumstances, do pass out whenever the salts accumulate greatly in the fluid which

naturally moistens the throat and air-passages. Therefore, whenever a person has breathed unusually cold dry air until that fluid, because of its evaporation, contains much salt, the albuminous part of the blood comes out in the throat or lungs wherever the salty fluid is. Whenever this exudation occurs there is then a chance for the *bacillus tuberculosis* to lodge and multiply, because it is there kept in a nutritive solution at the temperature of the body."

He claims that all the diseases named are controlled by the temperature and dryness of the atmosphere, and in the manner just indicated. How can this explanation be reconciled with the fact that the highest ratio of phthisis to the population is in the North-Eastern and Middle States, and the highest ratio of pneumonia is on the lower part of the Atlantic Slope between the Delaware and Savannah, and in the middle and northern part of the Mississippi Valley, with deep, moist alluvial soil, and atmospheric moisture above the average for the whole country? Again, if it is cold and *dry* air that favors the production of pneumonia and phthisis, why does the first reach its climax in February and March, and the last in March and April, the three most changeable and *wet* months of the year?

PHAGOCYTES.

DR. WILLIAM OSLER, in his interesting address before the Society of the Alumni of Bellevue Hospital, April 3, 1889,¹ gave an excellent summary of what is at present known concerning the active functions of those normal protoplasmic bodies, termed colorless corpuscles, migrating cells, leucocytes, etc. Since Metschnikoff clearly demonstrated the fact that the colorless corpuscles of the blood were not only capable of amœboid movements, but also of attacking and enveloping foreign bodies in the blood and tissues, a large number of active investigators in Europe and America have studied the subject with more or less success. And all agree in stating that these cells are, throughout the healthy structures of the body, actively engaged in enveloping and removing minute particles whether derived from the disintegration of tissue or introduced from without.

From their exhibition of this capacity to de-

vour and remove obstructions and foreign particles, they have been called *phagocytes*. Dr. Osler says they are met with: "1. As the colorless corpuscles of blood and mucus. 2. The connective-tissue cells, free and fixed, within the connective-tissue proper, or forming the supporting framework of the solid organs. 3. Cells of the spleen, bone marrow, and lymph glands. 4. The vascular and lymphatic endothelium. 5. The alveolar epithelium of the lungs." Metschnikoff regards the function of all these phagocytic cells, whether in the blood or in the several structures, as a property derived from the primitive unicellular organism; and attempts to show a genetic relation between the free living rhizopods and the cells of the middle germinal layer of the higher animals.

The lecturer first gives the principal facts established by a number of able investigators relating to the work done by the phagocytes in the physiological processes of nutrition and disintegration or metabolism, and shows conclusively that they exercise important functions throughout the lifetime of the animal. He says: "Not only in the early steps in the development of the blastoderm do we see them actively at work, but in the various stages of development, and in the mature body we have seen that in the lungs, in the intestines, and in the blood-making organs they have most essential functions." He next presents, in a clear and impartial manner, what has been ascertained concerning the action of the phagocytes on such microorganisms or parasites as may invade the living body. He gives the results of Metschnikoff's observations concerning the action of leucocytes in destroying the anthrax bacilli, the microorganism of erysipelas, the spirillum of relapsing fever, and the bacillus tuberculosis. He gives also the observations of Baumgarten and Hess in relation to the same microorganism, and those of Ribbert and Hess in regard to their action on the staphylococcus pyogenes aureus when injected into the lungs of rabbits; and those of Christmas-Dircknick-Holmfeld, Richard, Marchiafava and Celli, Golgi, Bitter, Nuttall, Sternberg, Councilman, James, Shattuck, and his own. Three or four of the last named have devoted much time to the study of the hæmatozoa of Laveran, as presented in the blood of patients affected with malarial fever and their relation to leucocytes. All the investiga-

¹New York Medical Journal, April 13, 1889.

tors who have carefully studied the subject, agree that the cells in the blood and tissues included under the head of leucocytes are found in various parts, containing within themselves more or less of the débris from disintegrating red corpuscles, necrotic tissue, and various microorganisms, and may, therefore, be regarded as natural scavengers; they do not all agree in regard to their true phagocytic character.

For while Metschnikoff, Laehr and Ribbert would represent them as an army of warriors, ever ready to attack and devour every microorganism that ventures to invade the living body, thereby making the living body a perpetual battlefield, in which the army of phagocytes are waging, with varying degrees of success, an exterminating contest with the hosts of pathogenic germs that are perseveringly striving to enter their citadel; Baumgarten, Hess, Bitter and Nuttall, directly deny their active phagocystic character, and claim that they are simple scavengers aiding in the removal of the débris resulting from either disintegrating structure elements or microorganisms already dead, or foreign particles of any kind. With strict impartiality Dr. Osler closes his excellent lecture with the following paragraph:

"To conclude: While phagocytosis is a widespread and important physiological process throughout the animal kingdom, and while it undoubtedly plays a most important part in many pathological conditions, the question of an active destructive warfare waged by the body cells against the microorganisms of disease must still be considered an open one."

ATROPINE AS A REMEDY FOR SHOCK.

Under this head DR. FRANK C. BRESSLER, of Baltimore, has a brief communication in the *Therapeutic Gazette* for April, 1889, in which he refers the primary seat of shock to the nervous centers in the medulla oblongata. He claims that shock is not only a depression of the circulation, but in every case involves the cardiac, respiratory, vaso-motor and secretory centers, so far as they exist in the medulla oblongata, and consists in a sudden molecular disturbance in those centers of greater or less severity. It is not claimed that all these centers are equally disturbed in every case of shock. On the contrary, in some

cases the cardiac and vaso-motor functions are chiefly affected, and in others the respiratory suffer most, as it did in the case related by Dr. Bressler; and in choosing remedies we should be guided by the special predominating feature of each case. The correctness of the claim that *all* cases of shock have their primary seat in the medulla oblongata admits of some doubt. Cases of shock derived from blows or severe injuries in the epigastric region, especially, have been characterized by such extreme depression of the vaso-motor influence over the circulation, while the respiratory and mental functions were much less disturbed, as to suggest the thought that the primary seat of molecular disturbance was in the semi-lunar and other abdominal ganglia of the sympathetic system of nerves, and only reached the cerebro-spinal centers secondarily through the connecting links with those centers.

Granting the correctness of the position that the alarming condition recognized as *shock*, whether produced by mental or physical influences, consists in a direct depression or impairment of the function of one or more of the important nervous centers, in choosing remedies it is of much practical importance that we keep in mind two facts; *a.* that a large percentage of cases of shock have recovered without any remedies, except fresh air and rest, and many more have done so in opposition to the injudicious remedies used; and *b.* that when medicines are required they should be such as are capable of increasing either nerve force or nerve sensibility, or both, and not mere anæsthetics that while quieting restlessness, actually diminish both sensibility and activity in the nerve centers. But this distinction is entirely lost sight of by the people and a large proportion of the profession, as we see in the almost universal resort to alcoholic liquids as the first, and in many cases the only remedies in such cases. And yet no fact is better established than that alcohol is as direct an anæsthetic as is chloroform or ether, and as certainly diminishes both the sensibility and activity of the nerve centres, even to the degree of entire paralysis if the administration is continued sufficiently active. As an illustration of this general tendency to confound anæsthetics with nerve tonics, Dr. Bressler himself commenced the treatment of the interesting case he relates by administering brandy both by hypodermic injection and by the mouth,

have already been promised over thirty papers. The following is but a partial list of the contributors. A revised list will be published soon:

Bryson Delavan, M.D.; C. H. Knight, M.D.; Lawrence Trumbull, M.D.; Holbrook Curtis, M.D.; Chas. H. Knight, M.D.; C. E. Bean, M.D.; Geo. A. Richards, M.D.; Chas. Denison, M.D.; S. S. Bishop, M.D.; A. B. Thrasher, M.D.; Carl Seiler, M.D.; Chas. E. Sajous, M.D.; Hal. Foster, M.D.; John E. Logan, M.D.; F. Whitehall Hinkel, M.D.; W. C. Richardson, M.D.; F. O. Stockton, M.D.; Lenox Browne, London.

The following have signified their intention of furnishing papers if possible for them to do so:

E. F. Shurley, M.D.; E. Holden, M.D.; J. N. Mackenzie, M.D.; John Porter, M.D.

The programme will be carefully arranged and a definite time allowed for each paper, so that no time need be wasted. All titles should be sent to the Secretary before the 14th day of May.

E. FLETCHER INGALS, M.D., Sec'y.,
70 State St., Chicago.

W. H. DALY, M.D., President.

Section on State Medicine.

The following additional papers have been prepared for the Section on State Medicine:

"Notes on the Progress of Leprosy," Dr. Benjamin Lee, Philadelphia, Pa.

"Disposal of House Refuse," Dr. Alfred L. Carroll, New York, N. Y.

"Modern Sanitary Conditions," George E. Waring, Jr., Newport, R. I.

"Ranch Life in Texas for Consumptives," Dr. J. R. Briggs, Dallas, Tex.

"The Benefits of Sanitation Applied to Obstetric and Gynecological Surgery," Dr. T. A. Ashby, Baltimore, Md.

"Report of the Standing Committee on Meteorological Conditions," Dr. N. S. Davis, Chairman.

S. T. ARMSTRONG, Sec'y of Section,

U. S. Marine Hospital Service, New York.

J. BERRIEN LINDSLEY, Chairman.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting, December 19, 1888.

THE PRESIDENT, THOMAS C. SMITH, M.D., IN
THE CHAIR.

DR. MORAN presented for Dr. P. J. Murphy the following pathological specimens:

AN OVARIAN MULTILOCLAR CYST.

Mary G., æt. 20, white, single, native of Va. Admitted Nov. 28, 1888. Puberty at 14. Was well in every respect until fourteen months ago,

when she was confined to bed for several days by severe pain in the lower part of the abdomen. At that time she noticed a swelling in the left side which has increased steadily until the whole abdomen is distended. She has had no pain since the first attack except backache at times. Menses have continued regular and normal to date. Menstruated November 27 to December 2. Slightly constipated. Appetite poor. Nervous. Does not sleep well. Has lost a great deal of flesh.

Examination December 12, under ether. Irregular mass in abdomen, movable, and extending from below the pubes two inches above the umbilicus. This mass was firm, lobulated, and no distinct fluctuation detected. Uterus normal and does not move with the growth. Body of uterus and right ovary could be distinguished per rectum. Left ovary not felt.

December 19. After a consultation of the advisory board the patient was etherized, and an exploratory incision three inches long made in the median line. The tumor was found to be ovarian (left ovary), and the incision was extended to the umbilicus, after attempting to draw off fluid from the growth with a trochar, several vascular adhesions ligated and cut, and one large adhesion to the abdominal wall torn through. The tumor was then turned out of the abdominal cavity, the pedicle ligated with strong silk and severed with scissors. Shock was severe—the patient being pulseless for thirty minutes after the mass was turned out, and the hæmorrhage from adhesions was severe and difficult to control; numerous ligatures of fine catgut were used for this purpose. The bleeding was finally checked, and a drainage tube being inserted, the wound was closed with deep sutures of silk and superficial sutures of catgut. She was put to bed, given $\frac{1}{4}$ grain of morphia hypodermically and reacted well.

CANCER OF THE RECTUM SIMULATING PELVIC CELLULITIS IN ITS PHYSICAL SIGNS.

B. C., æt. 55, white, native of Ireland, applied for admission to the Hospital December 3, 1888, giving the following history: Never married. Had good health until four months ago, when, after standing a great deal on her feet, she experienced pain in the right iliac region. This pain was severe at times, always present, and growing worse. About the time this pain began her bowels commenced to move four or five times a day. Evacuations watery, light colored, and containing mucous strings. Appetite fair. Otherwise healthy. Has been living on toast and "dry food" to check the diarrhoea.

Examination. Patient emaciated. Abdomen flabby and slightly tender to pressure on right side. Uterus prolapsed and immovable. Cervix small, with a "pin hole" external os. Vaginal

roof indurated and a hard mass plainly felt in the sac of Douglas, tender to the touch.

It was thought to be a case of pelvic cellulitis, and intestinal catarrh, and the patient admitted to the Hospital. She was put to bed, given a milk diet, hot douches, and a 5-grain salol pill every four hours. In a few days the diarrhoea ceased and she became constipated.

December 10. A dose of salts given and vomited.

December 11. This was repeated, but the bowels did not move. Enema ordered, but without effect.

December 12. Castor oil capsules containing $\frac{1}{4}$ drop of castor oil given, one every four hours until four were taken.

December 13. Abdomen tympanitic. Patient vomiting frequently. Pulse and temperature normal and abdomen not tender. Had several attacks of colicky pain during the day. Rectal tube passed thirteen inches into rectum and emulsion of turpentine, quinine and glycerine injected. Strychnia given by the mouth.

December 14. To overcome paralysis of the intestine and soften scybæ the faradic current was used and the rectal tube used for injections every two hours with the patient in the knee-chest position. Water, glycerine and other liquids thus injected regurgitated by the side of the tube when force was used, but some fluid was retained. During the day the patient vomited faecal matter.

December 15. After vomiting stercoraceous matter, she had violent pain for fifteen or twenty minutes, and her strength failed rapidly. The extremities became cold, and the radial pulse extinct. Stimulants and heat were unavailing. A fine trochar passed into the abdomen allowed gas to escape, but did not improve her condition. She died at 12 o'clock of exhaustion and heart failure. She was perfectly conscious to the last, and during the whole course of her illness the temperature was normal, and she had little pain except a few sharp attacks lasting fifteen or twenty minutes.

It was subsequently learned from her sister, that she had been ill for more than a year, having had marked symptoms of stricture of the rectum. These symptoms had been purposely withheld.

The post-mortem was made by my assistant, Dr. W. P. Carr, who had charge of the case, with the following result:

Autopsy four hours after death. Rigor mortis. Body emaciated. Stercoraceous matter running from the mouth. Abdomen greatly distended and tympanitic.

Peritoneal cavity contains some gas, and about a gallon of dirty serum mixed with faecal matter. Intestines adherent to each other, to the omentum and to the abdominal parietes, many of the ad-

hesions being old and very firm. Sigmoid flexure of the rectum, at a point fourteen inches above the anus, attached to the posterior wall of the uterus by a dense cancerous mass; and the intestinal wall thickened and bent at this point so as to cause complete obstruction. Above the obstruction, the whole large intestine distended to a diameter of three inches by semi-fluid faeces, is in a gangrenous condition, and has to be handled with great care to prevent dropping to pieces. This condition most marked at the cæcum, where the gut wall has sloughed through in places, allowing faeces to escape into the peritoneal cavity. Spleen, liver, and kidneys, of a light-blue slate color—tough and leathery.

DR. GEORGE WOODRUFF JOHNSTON reported a case of *Fibroid of the Uterus Treated by Electricity*.

DR. J. W. BOVEE read a paper on

THE USE OF ELECTRICITY IN THE TREATMENT OF DISEASES OF THE FEMALE PELVIC ORGANS.

(See p. 505.)

DR. J. R. BROMWELL said he had listened with much interest to the paper and report just read. As there was so much yet to learn regarding the application of electricity in the treatment of diseases peculiar to women, he asked pardon for any criticism he might make in the discussion. In making use of such indefinite terms as "galvanic or faradic current," and failing to measure, by accurate doses, the electricity used in the treatment of his cases, Dr. Bovee's paper was incomplete, and lacking in practical value as a guide to us in the treatment of similar cases hereafter. Positive and definite dosage is as necessary in the electrical treatment of disease as it is in any other method, and unless the intensity of the galvanic current used is accurately measured, by having a reliable milliampèremetre in the circuit, the treatment is uncertain, haphazard and empirical. It may be negative in its results, owing to no current passing, or it may be positively harmful from the unknown strength of the current. He had known patients treated for weeks by a most skilful physician, with one of the most improved batteries, before milliampèremetres were in general use, who thought he was giving his patient the full benefit of electrical treatment, but, upon placing a reliable milliampèremetre in the circuit, found, much to his astonishment, that it failed to register more than 3 or 4 milliampères, with a minimum resistance. His battery had run down. With the battery in such condition, had he been guided by the number of cells which the patient could bear with comfort, or freedom from severe pain, as to the strength of current to be used in future treatment, and in his next case used a battery more recently charged, incalculable harm might have been the result, three or four cells of a recently charged acid battery giving as strong a current

as a dozen of one almost exhausted. There are few, if any, perfectly constant batteries in the market, all varying more or less, owing to the use to which the battery has been put since charged. There are other reasons, fully as weighty, why something more reliable than the number of cells used is necessary. The resistance offered by the tissues to the passage of the current is never the same in any two patients. The resistance offered by the electrodes varies also. The action of the poles, which are widely different one from the other, the size, shape, and material of the electrodes, as well as where and how they are placed, are subjects worthy of the most careful consideration and study, and should be noted in the record and report of all cases treated by electricity. Any haphazard use of the poles is unscientific, lacking in practical value, and unquestionably harmful, not to mention the perplexity to the operator when improperly used. Englemann, Apostoli and others have laid down such clear and positive rules for the guidance of the gynecologist in the use of electricity, that it would be inexcusable to occupy time by repeating them here.

The enthusiasm of a year ago, when batteries were selling here by the hundred, has calmed down, and electricity is settling down to a more reliable basis as a remedial or curative agent in the hands of the gynecologist. And if we hope for anything of practical value from it, or to place it upon an equal footing with other methods of treatment, or to formulate rules for our guidance in treating other cases, or to arrive at positive scientific conclusions regarding its value, we must work with it scientifically and not empirically, to fool ourselves and tickle the fancy of patients, who may be awed by the display of elaborate and costly apparatus into believing that something wonderful is being done.

Whilst not a cure-all, electricity has its proper place, and that an important one, in the treatment of diseases of women. Fibroids *will* diminish under proper electrical treatment, and thereby in some, if not all cases, do away with the necessity for the use of the knife. Some of their most dangerous symptoms are relieved by electricity; for instance, the troublesome hæmorrhage so often accompanying them. Frequently repeated applications, extending over months or years, are now abandoned for fewer applications, but higher intensities, 150 to 200 milliamperes, by electropuncture into the body of the tumor. The action of electricity upon neoplasms continues for some time after the treatment, consequently there is no need for very frequent applications, when properly applied. One year ago he was very enthusiastic over the results of the electrical treatment of cervical stenosis, but was sorry to say he had changed his mind, owing to all his cases returning to their original condition five or six months after stopping treatment.

To remove indurations and extravasations resulting from pelvic inflammation; to relieve ovarian pain, or, as Engelmann says, engorgement and accompanying pain; as an auxiliary in treating uterine displacements; to relieve some forms of constipation; and in the treatment of hysteroneurosis, electricity had given him good results.

The proper treatment for laceration of the cervix uteri is an operation. He thought, in regard to Dr. Bovee's first or second case, that all the good results secured were obtained by the operation, and not by the electrical treatment. Only a short time ago he operated upon a woman whose health was a perfect wreck, due to a badly lacerated cervix and its accompanying hyperplasia. She is now in perfect health, with no other treatment. There are idiosyncrasies forbidding the use of electricity which cannot be determined beforehand. He had seen a current no stronger than 3 or 4 milliamperes, the negative electrode in the uterus, the positive, a dispersing electrode 4×6 inches, cotton covered, on the abdomen, cause nausea, vertigo, and an inability to walk or stand for some time afterwards. When this condition exists, the only thing to be done is to abandon electricity in that case.

DR. JOS. TABER JOHNSON said he had not intended to speak upon this subject, as he was not yet quite sure what value to place upon electricity in gynecological cases, but would say a few words upon some of the points raised in the very interesting paper of Dr. Bovee. He would endorse all that Dr. Bromwell had so well said in his opening remarks in regard to exact dosage. To say that a patient had simply been treated by electricity was not enough in this day, when so much is known of the value and effect of the various kinds of currents, their strength, quality, quantity, intensity, length of séance, etc.

The treatment of extra-uterine pregnancy was a very large and important subject. It was one of the live and vexed questions now agitating the profession. There existed quite a difference of opinion in minds of equally good men as to the final value of electrolysis in these cases. It was claimed by some that in many of the instances reported as cures by this agent ectopic gestation had never been proven to exist; and abdominal surgeons were slowly coming to the conclusion that in the long run women stood a better chance of ultimate recovery to have their abdomens opened and the entire mass thoroughly and properly removed, than to run the gauntlet of many dangers from the presence of a dead *fœtus* in their bellies for many months, and perhaps for years. In a recent discussion on this subject before the American Gynecological Society Dr. Johnstone, of Kentucky, had compared the *fœtus* and its membranes or placenta killed by electricity to a dynamite cartridge ready to explode on provocation, and to finally destroy the patient by the

slow and exhausting process of ulceration and inflammation, or by the more rapid process of septicaemia.

The case mentioned by Dr. Bovee in his paper was a good illustration for both sides of this question. A distinguished gynecologist had reported it as a success for electrolysis. He thought he had killed the foetus before the completion of the third month, and had thus saved his patient, but the subsequent history of the lady showed that she had been a terrible sufferer. She had septicaemia for weeks, and finally the bones of a five months' foetus were with difficulty extracted through the vaginal roof, and very offensive discharges were escaping for a long time. If this patient had been operated on as soon as the diagnosis was made out she would probably have been cured in much less time, and would have suffered much less, and been in much less danger. While he had never operated on a case of this kind and was therefore not in a position to give advice, still he felt quite sure that, in this age, if he were certain of his diagnosis he would operate—if not certain he would resort to electricity, and he thought that was the position the profession would soon come to occupy.

The treatment of uterine fibroids by electricity was also a large subject. Its proper use demanded much knowledge of the subject, and skill in the manipulation of powerful batteries. It was claimed by Engelmann, Cutter, and Martin, in this country, and Apostoli, Keith, and others, in Europe that a few applications of strong currents was all that were required.

A deep puncture of a large fibroid with a properly insulated, sharp-pointed electrode—with a very large dispersing abdominal electrode—and a current of 200 or 250 milliampères, was recommended. Its repetition was not considered safe oftener than once in a week or ten days, and from six to ten, or even a less number of applications was thought to be sufficient. In these operations accidents have occurred. Indeed one abdominal surgeon stated sometime ago that he had heard of more deaths from the use of electro-puncture than had occurred to him in the performance of pre-vaginal hysterectomy during the year. Many of the cases reported as having been treated by electrolysis he felt sure, from the meagre reports, had not had all the advantage which might follow the use of the skilled and scientific application of this valuable remedy, though, as stated, months had been devoted to it and several hundred applications had been made.

Then again, there are cases we are not yet able to determine beforehand, which not only fail to be benefited by electricity but, as Van de Warker has recently pointed out, are actually made worse by it. The tumors are irritated by the repeated shocks, and either grow more rapidly or degenerate into fibro-cystic tumors. As it is uncertain

what tumors would be benefited by electricity he would recommend its use in all fibroids requiring any treatment, and not resort to surgical interference until a reasonable trial had demonstrated its failure.

Very few uterine fibroids of any size had yet been caused to disappear under its influence. The most that enthusiasts claim for it, is that some of their patients have been symptomatically cured. This is a great gain of course, but it cannot be yet successfully shown that the removal of these tumors will not be occasionally demanded in order to save life—or to make life at all endurable.

The author of the paper gave a number of cases of pelvic diseases in women which he thought had been cured by electricity, and yet in nearly all of the cases detailed many other remedies were used conjointly, and in some cervical and perineal lacerations were successfully operated on, so that we are left in doubt as to which remedy we should ascribe the cure. We all share in the hope expressed by the Doctor that electricity may drive the surgeon out of the female pelvis, and that ovaries and tubes heretofore sacrificed to his knife may hereafter be saved by this subtle and mysterious agent, but at present the distinction must be drawn between masses in the pelvis which are the products of inflammation, and collections of pus. Electricity may relieve the former and should be faithfully tried. It may relieve the pain and symptomatically cure the patient, and in many cases greatly benefit and entirely cure them by causing the complete absorption and disappearance of the pelvic mass, but in severe or long-continued chronic cases of pelvic abscess or pyo-salpinx, he thought it was trifling in the face of grave dangers to risk their rupture by resorting to a useless and perhaps harmful treatment. After a surgeon had become sure of his diagnosis in these cases, as in cases of ectopic gestation, he thought the knife much safer and better practice. The great need of the times was a more perfect mode of diagnosis. He did not see why an error in diagnosis was any more culpable in pelvic than in abdominal or thoracic disease, but yet it was so regarded by many.

Obstetrical Society of Philadelphia.

Thursday, March 7, 1889.

THEOPHILUS PARVIN, M.D., IN THE CHAIR.

(Concluded from page 607.)

DR. MONTGOMERY: We have become so enthusiastic in the field in which we are working as perhaps to overlook the dangers and difficulties that environ the way, and in our desire to defend and possibly to push forward our own work we

are sometimes led not to report our disasters. I think that Dr. Baldy has done us a kindness in dwelling on some of the disasters that may occur in abdominal operations. I am rather surprised to find that hernia is such a frequent lesion, in his experience. I have not found it so. The method of closing the wound suggested by Dr. Price, is the one that I have largely used, and unless Dr. Baldy has come across some case of which I do not know, I have never had a hernia in my experience. Fistulas with a constant discharge are exceedingly depressing and distressing. I have thought that drainage per vagina might be preferable where this accident is liable to occur. In such a case, if fistula did follow, it would not be so bad as if it were in the abdomen. I operated this fall on a case in which half a gallon of broken down blood was removed from a sac. The sac was drained, but death occurred in a few days. The post mortem showed an abscess below the sac, which would have been opened if vaginal drainage had been made. The after treatment is exceedingly important in many cases. These results are, no doubt, due to the fact that there still remains some diseased tissue about the ligament or uterus. Where the tubal disease is gonorrhœal it is very hard to tie close enough to the uterus and to remove all the pyogenic membrane. Even when we do, the inflammatory condition is still present in the uterus. The tendency of the extension of such inflammation to the pelvic tissue is, in many cases, the cause of after trouble.

DR. HIRST: In three cases he had lately to deal with, fistulæ directly followed laparotomy. One woman died a year after the operation in consequence of this complication. In one case of great interest a mass of ligature was fished up, but the fistula still remains. After waiting some time he opened the vault of the vagina, behind the uterus, on to a point of a sound passed into the fistula from above. He did not think he could have opened the bladder, but a vesical fistula must have already existed, for when he cut through the vault of the vagina urine gushed out. A drainage tube was put through the whole track, but now four months have passed and the woman is dying. He should hardly think the use of nitric acid free from danger, used as recommended by Dr. Goodell.

DR. HOFFMAN: The paper of Dr. Baldy is iconoclastic. He looks at the matter from the wrong side. He collects a number of bad cases, and puts them forward as an illustration of all abdominal surgery. If we look at his collection in the light of the fact that each case represents but a small proportion of the work of each man, the percentage of bad cases will be found to be almost infinitesimal. I, myself, do not believe that, in the light of the bad showing which Dr. Baldy has made, if we to-morrow met with a case

such as Dr. Price has referred to, he would hesitate one moment to operate. He would trust to doing his work well, and would feel sure that in nine cases out of ten he would have a good result. A report in a journal a few days ago shows that a prominent operator caused two deaths, because he did not know how to tie the ligature. If a man does not know how to tie a ligature, that is no reason why abdominal surgery should be condemned. In my own experience he had never had a fistula follow these operations, nor has he had a hernia. Early rising is wrong. I know of an operator who boasted that his patient had gotten up at the end of a week, rode home and walked up two flight of stairs to her room.

DR. BALDY: I did not bring these cases forward as an objection to abdominal surgery, nor would they, nor many more, stay my hand if I found a case which required operation. My desire was to call direct attention to such accidents as these, and to stimulate our efforts to prevent their frequency. Nor is this, by any means, a complete list of all the cases on which I could put my hands. I could add dozens to the ones I have named. These cases have occurred in the hands of prominent men, men who profess to be teachers, and who number their cases by the twenties, fifties and hundreds. If we see such accidents in the hands of such men, we shall have more serious results in the hands of those less expert. Many cases of fistula can be avoided by care in the use of the drainage tube. Few surgeons understand how to properly take care of a tube. I cannot agree with Dr. Price that fistulæ always follow old fistula tracks, and is caused by diseased tissue left behind. In the majority of cases that I have seen, the diseased tissue has all been removed, and the track occurs through what was formerly clean, healthy tissue. I think that one common cause of hernia is the use of hæmostatic forceps. These bruise the tissues, and if allowed to remain on too long cannot but irreparably damage the vitality of the parts included between the blades. The less we use the forceps the better union we will get. It is a rare occurrence that I have to use more than one or two pairs, sometimes three. These are always removed in a few moments, in fact as soon as I open the peritoneal cavity. They are no longer needed, and often, if you are working through a small incision, are in the way. The fewer foreign bodies in and about the abdomen and abdominal wound the better for the patient and the easier for yourself. Cleanliness in all its details cannot be too strongly insisted on.

DR. E. P. BENARDY reported the history of a case of

SUPPRESSION OF URINE FOR SEVEN DAYS IN A CHILD TWO YEARS OLD, WITHOUT SERIOUS RESULT.

I report this case on account of its rarity. The case seems to me to be one of idiopathic suppression of urine. No assignable cause could be found, the little patient had enjoyed good health up to the time of its illness; never had measles, scarlet fever; in fact, none of the diseases of children; had an attack of catarrhal pneumonia when eight months old. I was requested to see the little patient on the evening of August 17, 1888. He had been ailing for the past few days, disinclined to play, when well of a lively disposition. Nausea was present, and vomiting had occurred during the day; tendency to loose stools, tongue clean white and flabby; skin white, eyes dull, pulse quick, no fever; ordered pepsine mixture. The next day, stomach more irritable, could not retain anything, had an attack of hiccough, pulse full and quick, no fever; was informed by the mother that the child had not passed any urine since the evening of August 1, 1888; ordered xx gtts. spt. æther nit. in warm water every hour or two. The following day (August 19, 1888), condition about the same. Passed about quarter of teaspoonful of pure blood from the penis. Examination over region of bladder showed no indication of fluid. Ordered a warm digitalis and flaxseed poultice to be applied over region of kidneys; a bitart. potassa mixture, with infusion digitalis, internally. August 20. No improvement. Did not sleep well during the night, eyes dull, twitchy movements of the muscles of the upper and lower extremities, easily started. August 21. Twitching increased, face of waxy hue, skin hot and dry, bowels opened several times. August 22 and 23. Skin burning hot, restless, sleepless, twitching excessive, head thrown back, eyes dull and heavy, face puffed, skin waxy, lips bloodless, no pain locally, even when pressure is made. August 24. Close examination over region of bladder shows it empty; 6 dry cups over kidneys and other treatment continued. Five hours later, passed a large quantity of clear urine. August 25. All nervous symptoms abating, eyes clear, stomach less irritable, passed urine of a light-yellow color. Improvement continued and patient discharged September 5, 1888.

The first thing that impresses us is the few dangerous symptoms apparent in the case. We know when complete suppression or even partial suppression of urine takes place in kidney troubles, how soon the case terminates in coma, convulsions and death. Leaving out the suppression of urine in the above case, there was no possible symptoms indicating the dangerous condition of the patient.

The literature on this subject is meagre, the only work on practice which mentions the subject is the sixth edition of George B. Wood's, on p. 676. On suppression of urine, he states, "By suppression of urine, as a title of a distinct af-

fection, is here meant either a complete cessation of the secretory action of the kidneys or a diminution of it so considerably as to be clearly morbid. It is undoubtedly in general, perhaps always, a mere symptom or effect of some other disease; but instances occur in which no other affection is obvious; and in these it must in the present state of our knowledge be considered as idiopathic." On p. 677—"a rare form of suppression, occurring apparently as an idiopathic affection, was described by Sir Henry Hallford, and has been occasionally met with by other practitioners. A person in apparently full health observes that he passes little or no water, but suffers from no other inconvenience than a feeling of restlessness and anxiety, with perhaps a little uneasiness in the lumbar region. After a day or two he is seized with a chill, or finding the urinary affection unabated, becomes somewhat uneasy and applies for medical advice. There is no fulness or pain over the pubes or in any part of the abdomen, no febrile action, no symptoms whatever calculated to call attention decidedly to the kidneys, except simply that of great deficiency or absence of urine. No effort on the part of the patient is of any avail in increasing the discharge, and the introduction of the catheter is followed by the escape of only a few drachms of a pale, somewhat turbid urine, usually coagulated by heat and of little density. In a short time, however, nausea comes on, and increases until vomiting results; and this continues afterwards to be one of the most troublesome symptoms. The patient becomes dull and torpid; the pulse, so far from being excited, is usually less frequent than in health. The urine, if not completely suppressed from the beginning, now becomes so. A urinous odor is sometimes exhaled from the surfaces. The dulness increases to drowsiness, with occasional signs of mental wandering or incoherence. Eructations and hiccoughs are not infrequent symptoms. In about four or five days the patient sinks into coma and dies afterwards in the midst of repeated convulsions."

Many of the above symptoms were well marked in our little patient's case. Notably, the condition of the pulse, no febrile reaction, or little if any. An absence of any dangerous symptoms likely to attract attention.

DR. CHAS. B. NOBLE reported

A CASE IN WHICH FOUR DRACHMS OF SQUIBBS' F. E. ERGOT WAS ADMINISTERED EARLY IN LABOR.

On the 30th December last I was called to attend Mrs. M. in labor with her second child. Vaginal examination showed that labor was just beginning. The os was slightly patulous. The vertex was presenting, but the head was not deeply engaged in the pelvis. Abdominal pal-

pation showed that the child lay in the first position. Mrs. M. had had malarial intermittent fever during the preceding week, but had treated herself with quinine. This being her "child day" I ordered her ten grs. of quinine, and at the same time wrote for an ounce of f. e. ergot to be used after the completion of labor. On my return, after a short absence, I was informed it was well I had come. One should never be surprised in obstetrical practice, but as I hastened my steps I reflected upon how easy it is to be mistaken in prognosis. Upon reaching the head of the stairway I heard a groan, as if issuing from one in the final throes of labor. On entering the bedroom I was met by the statement, "Oh, doctor! your medicine is bringing it," and was told that violent pains had come on about an hour after my departure. Questioning the patient about the medicine, I was told that her mother had given her three spoonfuls of the ergot—the mother knew the odor of ergot, and had taken it in many of her ten labors. The bottle of ergot was half empty. The violent, and as I now found continuous, pains were thus explained. Telling the patient that her mother had anticipated my wishes in the administration of the ergot, also that no harm had been done,—which, however, I was not so sure of—I proceeded to examine into the condition present. The woman was suffering agonies, the uterus was rigidly contracted, and it not possible to demonstrate any rhythmical relaxation. Internal examination showed the cervix fairly dilatable, but the os was not larger than a half dollar. The foetal heart could be plainly heard, but was beating faster than at my first visit. Evidently the condition was somewhat serious. I administered a hypodermic injection of $\frac{1}{4}$ gr. morphia with atropia to the patient, and then gave chloroform freely enough to suspend the reflex abdominal contractions, which were well marked. From the combined effect of these remedies an improvement was soon noticed; the continuous, or nearly continuous, ergotic contractions were replaced by rhythmical contractions; the cervix dilated rapidly. When the cervix was pretty well dilated I ruptured the membrane to hasten the labor, as the foetal heart beats were not so easily heard as before, and as the case was at that time easily under control of the forceps. I felt much inclined to apply the forceps to expedite delivery, but concluded that it was best to watch the foetal heart and interfere on indication. Labor progressed rapidly, and in little over an hour from the time chloroform was given the head was on the perineum. There it was arrested by a cicatricial band, extending across the vagina, the result of a laceration during the first labor. As it was evident that this would not stretch, and as the foetal heart sounds, while still to be heard were less distinctly audible, I made traction on

this band with two fingers until it gave way. The child was born soon after, without further laceration of the pelvic floor. When born it was in a state of *asphyxia livida*, but cried and breathed nicely after a little blood was squeezed from the cut end of the cord, and the dorsum rubbed, the head in the meantime being held dependent. The child subsequently did well; having, however, a hoarseness of the cry, which has not disappeared. The mother also did well ultimately, although she suffered from fever for some days. This case was of exceeding interest to me, as I had never before witnessed the full physiological effect of ergot on the parturient uterus. At this time such cases are seldom seen, and it is on this account that I have reported this one to this society. I hope it may prove interesting, at least to the younger members; and perhaps elicit discussion as to the true place of ergot in the therapeutics of obstetrics.

DR. LONGAKER had only seen the action of ergot on the parturient effort, in the hands of midwives, and then always with disastrous results. The character of the pains was as described by the reader of the paper, and when given in any large quantity the child was always still-born. From the spasmodic condition of the uterus the delivery of the placenta had been difficult in several cases. In one case an anæsthetic was required. The midwives always use powdered ergot. The only place for ergot was after labor was completed.

DR. VOGLER had used ergot freely, particularly where there was inertia, where the pains are irregular, and in hysterical women where we can not get them to regulate the pains. He had not had any of the difficulties spoken of. It was a common habit of midwives to use it freely. When properly used, particularly after the first stage, it is safe and of value. He always used Squibbs' ergot.

DR. HOFFMAN would ask those gentlemen who were connected with large lying-in hospitals, whether or not they found it necessary to use ergot after delivery. In his own practice he did not use it at all, and believed that we could get along as well without it as with it.

DR. J. PRICE simply continued the use of ergot at the Preston Retreat, which Dr. Goodell had used before him. At the termination of the third stage of labor the patient received a drachm of ergot. If the third stage of labor is a complete one he hardly thought that ergot was needed. He had known it to produce nausea in sensitive, irritable women.

DR. HIRST followed the same practice as Dr. Price. There is one use of ergot he had learned in Berlin. In cases where post-partum hæmorrhage was feared, it is customary there to give a syringe-full of ergot hypodermically when the head is delivered. By the time that labor is

completed the action of ergot will be manifested.

DR. J. PRICE said that in the cities we know nothing of the disastrous results of the abuse of ergot. He had recently seen, in a mining town in the State, some frightful mutilations of the soft parts. He saw there more in one day than he had ever seen in the city, of these bad tears. On inquiry he found that it was a common custom to use ergot in the first stages of labor.

DR. BALDY thought that medical men were often tempted to overdose their patients and that the use of ergot was a case in point. Early in his practice he had used ergot after the third stage simply because he had been so taught. He found his patients complaining severely of after-pains and so was led to stop it. He had not since then seen a case which required its use.

DR. NOBLE was in the habit of giving ergot after labor was completed. He continued its use for some little time afterwards, not to produce after-pains, as happened to Dr. Baldy, but to prevent them, and had often saved himself the inconvenience of a second visit by so doing.

DR. W. H. PARRISH reported cases of

COMPRESSION, WITH THE FORCEPS, OF THE CORD
WHEN IT IS AROUND THE NECK OF
THE CHILD.

He said he believed that this occurred oftener than was supposed. During the last few years, in cases of still-birth, where the cord was around the neck he had tried to ascertain if this had been the cause of death. In two instances he had established to his own and others satisfaction that this was the cause of death. In the first instance the patient had been delivered five times previously, with four still-born children. The child was not very large and the delivery was an easy one, without any especial compression with the forceps. He was surprised to find the child was dead and could not be resuscitated. As the head was about being delivered he removed the forceps and took the cord from around the neck. He afterwards replaced the cord and re-applied the forceps, when it could be seen where the tip of the blades had compressed the cord. In the second case the child was small and the pelvis roomy. The only cause of delay was inertia. The cord was again replaced around the neck and the forceps applied. It could then be seen where the cord had been compressed between one blade and the mastoid process. There are some forceps more likely to produce this compression than are others. Where the tips of the blades closely approximate each other, and where the blades are long, compression of the cord is more likely to be produced. This objection applies to such forceps as those of Wallace, Davis, Hodge, Tarnier, and similar instruments. Compression is less likely to occur with forceps like those of Simpson's, where the space between the tips is greater. Com-

pression of the cord would be more apt to occur if one blade was applied at any point behind the ear. It is also apparent that with a small head the cord will be more readily compressed, if about the neck. If the forceps are applied after the head is in the pelvis and flexion has taken place, and the long axis of the forceps coincides with the occipito-mental diameter of the head the cord is safe. In any other method of applying the forceps the cord is not safe. If the forceps are applied early in labor there is more chance of compressing the cord than if we wait until the head is in the pelvis. It will also be noticed that if the forceps be not applied to the sides of the head, even after flexion, there is danger of compressing the cord. How many deaths occur in this way we do not know, as the forceps are usually taken off and the cord removed from the neck before delivery; unless the cord is replaced and the forceps re-applied there will be nothing to indicate the true cause of death.

DR. G. E. SHOEMAKER reported a case of

TUBERCULAR PERITONITIS.

Woman, æt. 23. Complained chiefly of pressure symptoms from ascites. Probable diagnosis of tubercular peritonitis made before operation, which was undertaken for this condition. Nodules felt in peritoneum of recto-uterine pouch, by the rectum. Short incision; flushing with boiled water; glass drainage for two days. Prompt recovery from operation. Patient considers herself entirely well four months afterward, but some fluid has re-accumulated. As an aid in the difficult diagnosis the importance of rectal examination of the peritoneum was pointed out, though it may not separate papilloma and malignant disease of the peritoneum from tubercular. The writer has collected 35 genuine American cases, not all reported. Of these 6 died immediately after the operation, and probably in consequence of it; a mortality of 17 per cent., as against one of not quite 7 per cent. in 88 non-malignant cases of exploratory laparotomy selected from those collected by Dr. Baldy, as having no disease of the peritoneum. Kümmel reports 39 European cases, with two deaths from the operation (elsewhere quoted as 6); while Fehling has collected 29 cases, with 6 deaths, probably the same cases as those referred to by Kümmel, with a different interpretation of the deaths. Only 11 of the writer's 35 cases are known to have remained well more than six months. He refers to the varieties of the disease as influencing prognosis, and also to the theories as to cause of cures. He reaches several conclusions, among them, that the best treatment is laparotomy, with boiled water flushing and drainage. No medication of the cavity. Also that the most that can be looked for in more than one-half the cases is temporary improvement, but that this is usually decided and far outweighs the risk of incision.

DR. J. M. BALDY was rather surprised that the speaker should have come to the conclusion that exploratory incision in tubercular peritonitis was more fatal than in other forms of disease. Some time ago in examining the records he had found 17 cases, with but 1 death, and that in no way due to the operation. The double-pneumonia case mentioned might safely be excluded also. Without excluding just such cases, the mortality in exploratory laparotomy for any and all causes, had arisen to over 16 per cent. in a list of 154 cases he had collected more than a year ago. Certainly it is not fair to attribute such deaths to the operation. For instance, one case had died from a piece of gut getting into the incision and becoming gangrenous.

DR. SHOEMAKER: Dr. Baldy did not collect all the cases of death for America. If we analyze our cases too closely we should get statistics which would not be fair to the patient.

FOREIGN CORRESPONDENCE.

LETTER FROM VIENNA.

(FROM OUR REGULAR CORRESPONDENT.)

Nerve Stretching for Tabes Dorsalis—False Anæurism Mistaken for an Abscess—Ichthyosis Partialis—Fœtal Ascites an Obstacle to Delivery—Herpes Zoster Caused by Arsenic—Relations of Neuralgias and Psychoses—Death of Prof. Soyka, of Prague, etc.

At a recent meeting of the Vienna Medizinisches Doctoren Collegium, Prof. Moriz Benedikt, our distinguished neuro-pathologist, read a very interesting and important paper on the stretching of the nerves in tabes dorsalis. The lecturer first brought forward a patient, 40 years old, who had come under his care about three and a half years ago (on June 8, 1885). The patient, at that time, presented symptoms of tabes dorsalis to so high a degree as the lecturer had never before observed them. The patient could stand upright only when supported at both sides of her body; in this situation she could also take some steps, but her gait had a pattering (loitering) character to a high degree. The patient also presented symptoms of ataxia in sedentary position. When the patient sat in a dark room, with her eyes closed, she began to wave, and fell from her chair. During the night the chamber of the patient had to be lighted, otherwise she was cast out of her bed when she turned over in it. Her tendon and papillary reflexes were, of course, quite extinguished. Deep anæsthesia of the skin, the muscles, and all the surfaces of the joints of the legs; anæsthesia of the fingers; ataxia of the arms; frequent and severe attacks of lancinating pains in the whole body. The disease under consideration was present for at least four years.

The lecturer, taking into account that the usual methods of galvano- and hydro-therapy—which were efficacious in numerous other cases—offered but little chance of recovery in such advanced cases as the one referred to, determined on performing the stretching of the right crural and the left sciatic nerves. The operation, in such a case, was, indeed, rather an act of therapeutic despair, but the success obtained surpassed all expectations. On the eleventh day after the operation, the patient left the hospital, and was immediately able to walk alone. The ataxia in the lying and sedentary positions had disappeared, leaving behind almost no trace of the former conditions.

Setting aside the considerable improvement which had been produced by the extension of the nerves, the advantage of this treatment also consisted in the fact that the patient now became accessible to the treatment with the galvanic current. Though ataxia of a high degree had still remained behind in the legs, and was now present, the patient was soon able to undertake great excursions without availing herself of a stick. The attacks of pain were particularly frequent and severe the first year, but they gradually and constantly became more rare, and during the last fifteen months, no single attack of pain had occurred. The last-mentioned fact was so much the more to be considered as the result of the operation of the extension of the nerves, as we knew by experience that galvanization had but little influence on the tabetic neuralgias. Prof. Benedikt had the opportunity of observing such an effect of the stretching of the nerves also in other cases. The patient was able to perform the domestic work, such as washing and cooking. The anæsthesia of the legs persisted in only a little ameliorated condition, and this was also true of the ataxia of the arms. The patient, however, was sitting and standing upright with closed eyes, surprisingly well.

Prof. Benedikt made some interesting critical remarks on the extension of the nerves in tabes dorsalis, and said, among other things, that he knew from numerous neuro-chirurgical experiences that the success of the surgical interference depended mainly on the fact whether the disease was of a recent date or not. It was just in the case of ataxia that it was still now difficult to operate upon recent cases, as the respective patients, being influenced by the ever-predominating views, withdrew from the operation. It was the conviction of the lecturer that the percentage of successes would increase considerably if the operation of the stretching of the nerves in tabes dorsalis was performed immediately after the exact diagnosis had been ascertained. Prof. Benedikt declared it to be his full conviction that, perhaps in the next generation, the non-operating at the beginning of the ataxia would be considered as a professional error. In obsolete and much pro-

gressed cases the chance was naturally much less, but that there was some chance was proved by the case brought before the Society.

Disadvantages to the patient from this treatment could now-a-days be no longer feared. In the first period of these operations, the fatal issue was not rare, and the lecturer himself had, in former times, the opportunity of observing some such bad results. The operation, however, as it was now practiced by Prof. Benedikt, was scarcely more dangerous than the extraction of a tooth or the cutting of corns (*clavus*).

If the operator would guarantee for the good success of the operation, he had to conduct the after-treatment for a long time, and continue his respective observations. The present doctrine of the inefficacy of the extension of the nerves in *tabes dorsalis* was chiefly due to the too short period of observation. If a doctrine had to be classical, *i. e.*, true for all times, it ought not to be in a hurry.

Dr. Hochenegg, Assistant to Prof. Albert, at the first surgical clinic of Vienna, brought forward before a recent meeting of the Imperial Royal Medical Society, of Vienna, a case in which he had mistaken false aneurism of the left femoral artery for an abscess, and had opened it. Küster had recently reported on similar cases, and in surgical literature there were hitherto only five such cases on record. The man, shown to the Society, 41 years old, had sustained, in 1878, a shooting-lesion in the middle of the left thigh, and at that time, after seven weeks' treatment, was dismissed from the hospital as cured; the bullet of the fire-arm had not been detected. In 1886 the patient complained of temporary pains in the thigh, and the ankylosis of the knee-joint also gave him some annoyance. In April, 1888, the pains in the left thigh became more severe, and the patient, moreover, stated to have felt, at the inner side of the left thigh, a solid tumor, which could be moved over the bone, and which disappeared at a later date.

On October 18 of last year the patient was admitted into the clinic of Prof. Albert, and stated that he had been taken ill under severe attacks of shivering, which repeated from twice to thrice a day; the solid tumor, the size of a walnut, had again appeared. On the examination of the patient a fluctuating tumor of the size of a fist was detected upwards of the internal condyle; the swelling was very painful on pressure, and the skin over it was dark, reddened; the surrounding parts were oedematous. Dr. Hochenegg made the diagnosis of an abscess of the periosteum, as all the symptoms pointed to such a condition. When he made the incision on the following day, he became aware of a blue membrane, which became torn; loose bloody clots and arterial blood discharged at the same time. After having applied the band of Esmarch Dr. Hochenegg emptied the

cavity and detected: 1, the bullet; and 2, a large piece of bone which stuck in the artery. The artery was ligatured above and below the cavity; the further course was very favorable. Disturbance of circulation was present only during the first few days; it, however, soon disappeared.

The patient had stated that he had worked hard on the day when he fell ill the last time; it was thus probable that the bullet, which was hidden, had sunk in the course of these years, and had driven the loose piece of bone into the artery. The tumor had repeatedly been palpated for ascertaining the position of the arteries, but on no occasion could pulsation or vesicular murmur be found. All these occurrences explained the diagnostic error.

At a recent meeting of the Royal Society of Physicians of Budapesth, Dr. S. Róna showed a child, 15 months old, which was affected with *ichthyosis partialis*. He had observed the child for four months without noticing any change in the process during this period. The first eruption with red patches in the face occurred during the third month of life of the child. In the fifth month the skin over the back and the sacral region became reddened and squamous, and soon afterwards these changes also supervened on the extremities. The *ichthyosis* was to be met with very rarely at such an age; according to Hebra, the *ichthyotic* process did not set in until the second year of life, and even then it appeared only as *pytirisias*, or *ichthyosis simplex*. It was interesting to see how, in the case brought forward before the Society, the cutis had already begun to shrink to such a degree that *sclerodactilia* was already present on the hands and feet. It seemed that the nearer the beginning of the *ichthyosis* was to the foetal life, the more dangerous this dermatosis was. In the first child of the mother of the little patient, which was born two years ago, *ichthyosis universalis* occurred in the second year of age, owing to which the child was quasi-transformed into a mummy, and perished.

Dr. Hubert Peters, assistant to Prof. Gustavus Braun, recently reported, before the Vienna Obstetrico-Gynaecological Society, on a case of ascitic dropsy to a high degree, which formed an obstacle in parturition. The case was particularly interesting owing to the fact that the obstacles in delivery due to pathological enlargement of the infantile abdomen were exceedingly rare. The woman was admitted into the clinic as a *bipara*, and stated that the first birth was normal, and the foetus well nourished. According to the statements of the mother, the rupture of the foetal membranes supervened some hours before her admission into the hospital, when about four litres of amniotic liquid escaped. The abdomen, which was before excessively extended, thus diminished to only a little degree.

On the external examination the abdomen was

found to be still much extended, and the palpation revealed the presence of quite particular conditions. At the bottom of the uterus a large, hard and movable skull could be felt; over the entrance of the pelvis, apparently small buttocks were felt. In the whole body of the uterus (corpus uteri) there was uniform tension; the fluctuation was not distinct. The sounds of the heart of the foetus could be distinctly heard on the left side of the bottom of the uterus near the skull. The back of the foetus could nowhere be felt.

The internal examination showed the following conditions: The uterine orifice had the size of 5 centimetres; both the feet were to be felt there. In the course of some hours the feet, owing to slight labors, gradually advanced as far as the vulva, and it could be stated that the size of the feet stood in no normal proportion with the size of the skull and the abdomen felt on palpation. As there was no sure evidence of the presence of a twin foetus, and taking into account the frequent combination of hydramnion and monstrosity of the foetus, they thought in the clinic of such a combination. The extraction of the foetus was deferred for awhile, owing to the general weakness of the mother. On making the extraction the small buttocks were drawn as far as the entrance of the pelvis, when an absolute obstacle for further extraction proved to be present. The introduction of the whole hand of the operator into the lower part of the uterus revealed the fact that the obstacle was due to a colossal enlargement of the abdomen. As there was no possibility for making the extraction of the non-lessened abdomen, puncture of the abdomen was resorted to. In the absence of a sufficiently long trocar, Dr. Peters determined on performing perforation by means of the perforatorium of Nägele, which could be done with some difficulty. About $2\frac{1}{2}$ litres of a serous, cloudy fluid escaped, when the extraction could be performed without any inconvenience.

The child had died during the birth, and after the ascitic fluid had discharged it still weighed 4,000 grams; hence, in intra-uterine life it had the weight of 6,500 grams. The mother of the child left the hospital in perfect health.

At a recent meeting of the Royal Society of Physicians of Budapesth, Dr. Johann Bókai reported on a case of zoster, owing to arsenic. He showed a boy who had taken arsenic owing to chorea minor, and in whom herpes zoster pectoralis had developed on the twenty-eighth day after the use of the drug. Dr. Bókai had already observed similar cases, and particularly he had met with three such cases in 1883. Hutchinson, in 1868, had observed eight such cases. In the *Medical Times* of 1869, seven cases had been published in which herpes zoster had supervened after the use of arsenic taken for different reasons. Basing on these cases, Dr. Bókai considered the

herpes zoster, in the case under consideration, as being due to the use of arsenic, so much the more as the drug had, in this case, been administered for from twenty-eight to forty-five days, and the quantity of the solutio arsenicalis Fowleri taken amounted to from 257 to 450 drops. Except for slight conjunctivitis, no other symptoms of poisoning with arsenic were present.

Dr. Anton, Assistant to Hofrath Prof. Meynert, at the clinic for psychical diseases at Vienna, read a paper on the Relations of Neuralgias to Psychoses before the Imperial Royal Society of Physicians, of Vienna. He gave a detailed account of two cases of supra-orbital neuralgia in individuals who were affected with hereditary *psycho-pathia*, and in whom the neuralgia became associated with temporary attacks of loss of consciousness, and with complicated movements (biting, beating, stamping), and compulsory ideas of murder and suicide. There was, moreover, complete amnesia and permanent psychical depression; the whole complex of symptoms resembled very much that of epileptic mania.

As the bromide of potassium, antipyrin, anti-febrin, phenacetin, etc., proved inefficacious, faradization was resorted to with the best success. After the application of the electric douche with a gradually augmenting intensity, the neuralgic attacks completely disappeared; the relapses were easily combated, and both the patients were dismissed as cured, and had also become able to work.

The lecturer then discussed the relations of the neuralgias to the above-mentioned complicated movements, which he considered as being of a reflex character; and also their relations to psychoses, pointing out that with the removal of the peripheral irritation, the disturbances in the central organ could equally be removed.

Docens Dr. Eisenschütz directed the attention of the audience to an experiment which he had made in such cases. If he made an injection of morphine on a man who suffered from such neuralgias, the small and tense pulse became again soft and full, so that he could determine, by the palpation of the radial artery, the moment at which the injection had exerted its effect.

Dr. Anton confirmed the correctness of this observation, which he also tried to prove by the demonstration of the pulse-curves of the above-mentioned two patients before and after faradization; from the pulse-curve alone it became evident whether the patient was free of pains or whether he was suffering from pains.

Dr. Soyka, Professor of Hygiene at the Prague Medical Faculty, and a distinguished scholar in the domain of hygiene and bacteriology, recently died by suicide in Prague. This suicide was due to excessive nervous irritation. Soyka was descended from a psycho-pathic family.

Prof. Kahler, of Prague, the eminent neuropathologist, was intrusted with the second chair

for Internal Medicine at the Vienna Medical Faculty, which had become vacant by the death of Prof. v. Bamberger.

Vienna, March, 1889.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York Academy of Medicine—Section on Practice—Simulo in the Treatment of Epilepsy—The Significance of the Crepitant Râle, etc.

At the last meeting of the Section on Practice of the Academy of Medicine, Dr. M. Allen Starr read a report of the new drug simulo in the treatment of epilepsy. Like others, his attention was first directed to the subject by the article of Dr. W. H. White, which appeared in *The Lancet* in March, 1888, and he gave a *résumé* of the observations of White and also those of Eulenberg, of Berlin, published in August, 1888.

White reported seven cases treated by this agent, all of them being cases in which renal fits occurred every week. In the first case neither simulo or bromide was of any particular benefit. In the other cases there was considerable improvement under the use of simulo, and in case number seven, which was one of unilateral spasms with paresis, the spasm was very much relieved by the drug, although it had not been affected by large doses of the bromides. He concluded his report by stating that he would not have it thought that simulo will cure epilepsy, but he believed that an improvement occurs under its use, and that it may be used as a substitute for the bromides when these produce ill effects.

Eulenberg reported that simulo appeared to have no effect whatever in cases of hysteria, and that in three out of four cases of epilepsy in which he employed it its effect was found to be weaker and less certain than moderate doses of the bromides (90 to 120 grains daily). In the fourth case, in which the use of the bromides for years had not succeeded in reducing the number of attacks below four to eight in a week, the effect of maximum doses of tincture of simulo (six drachms daily), was to reduce the number of attacks to two to five in a week. Subsequently he combined the bromides with simulo, giving a half dose of each, and the effect was at first as favorable as under the use of large doses of simulo alone. The frequency of the attacks gradually increased, however, and finally the patient was put back upon the bromides alone. Eulenberg's conclusion was that while simulo is not without use, it is decidedly inferior to the bromides in its effects.

Like White and Eulenberg, Dr. Starr used the tincture of simulo, in doses of from half a drachm to two drachms three times a day; and he gave

it in seven cases of extreme severity, which seemed to offer the conditions for a fair test of the powers of the drug. The first patient was a female 48 years of age, in whom the administration of the bromides was attended with very unpleasant effects. While the simulo appeared to prevent for a time the occurrence of an attack of grand mal, it had no effect whatever upon the numerous attacks of petit mal and hysteria from which the woman suffered. The second patient was a girl 12 years old, who had epilepsy from infancy, her attacks consisting of slight convulsions with loss of consciousness and loss of urine. The bromides had been used without any marked effect. Under the use of simulo, however, the attacks became reduced from about five a week to about three a week, while their severity diminished, and she no longer lost control of the bladder.

The third patient was a girl of 16, who had suffered from epilepsy, with both grand mal and petit mal attacks for two years. The simulo had no effect upon the petit mal attacks, but diminished the grand mal attacks from sixty-three in a month to four in a month. The month after this drug was discontinued, however, while taking bromide, chloral and belladonna the attacks of petit mal became very much reduced in number, and she had no grand mal attack whatever.

In the fourth, fifth and sixth cases simulo was given with apparently very fair results, although its administration was not kept up for any great length of time. The principal reason that Dr. Starr did not give the remedy a more extended trial was the costliness of the tincture of simulo, the price of which, he said, was 25 cents an ounce; and this constituted a serious objection in dispensary practice.

The seventh and last patient was a young man of 19, who had had precursive epilepsy since the age of seven; the attacks consisting of a sudden pallor followed by a flushing of the face and a sudden uncontrollable movement of the body. These attacks had never been controlled by bromides, and during the year 1888 they averaged one hundred a month. Under the use of nitroglycerine combined with bromides they were reduced one-half, but simulo had no effect upon them. In addition this patient had nocturnal convulsions, and upon these attacks of grand mal the simulo was found to have a decided effect, although this was pronounced as that produced by bromides.

The conclusions drawn by Dr. Starr from these cases are as follows:

1. Tincture of simulo has no effect upon attacks of hysteria-epilepsy, or upon the hysterical state.
2. It has no effect in modifying the frequency or severity of attacks of petit mal or of precursive epilepsy.

3. It has some effect in modifying the frequency and severity of attacks of grand mal, but is inferior in this respect to the bromides.

4. In cases where, for any reason, it is deemed necessary to suspend the bromides, it would be well to substitute simulo for them.

He then went on to say that there seemed to be no ill effects from the use of the drug. He found no evidence of change in the rate or character of the pulse or respiration, or other physiological effects, produced by the doses employed, and he thought it would be well to increase the dose progressively until 1, or even 2 ozs. were used daily. The suggestion of Eulenberg that the active principle of the drug should be obtained and employed he thought worthy of consideration.

The only one present at the meeting who appeared to have given simulo a trial was Dr. Landon Carter Gray, and he asserted that he had found it practically useless. He said he had employed it both alone and in combination, and he had obtained from it no results except such as one could get in almost any case of epilepsy by changing the drugs given. This was merely a temporary effect, and the same might be obtained by a hundred other agents. He had, therefore, discontinued the use of simulo, as it had in his hands proved so nearly useless that he did not feel sufficiently encouraged to pursue his investigations concerning it any further.

On the same evening Dr. F. W. Johnson read a paper on "The Significance of the Crepitant Rôle," and the following are the conclusions to which his study of this subject has led him:

1. The crepitant rôle is not pathognomonic of pneumonia.

2. It is heard also in dry pleurisy, in bronchopneumonia, and in phthisis.

3. There is a strong probability that it is almost always due to pleuritic inflammation.

4. The question as to whether it is heard also in cedema of the lungs and pulmonary apoplexy is unsettled.

As regards the mechanism of the crepitant rôle the three leading theories are:

1. That of Laennec, according to which it is due to the bursting of fine bubbles of air through a viscid fluid in the air vesicles.

2. That favored by Walsh, that the sound is due to forcible distension of the air vesicles, whose walls are rendered stiff by a glutinous exudation.

3. That advocated by Dr. James R. Leaming, that it is produced by the rubbing together of the two surfaces of an inflamed pleura which is coated with fibrin.

All the older writers and most of the modern ones, said Dr. Jackson, favor the intrapulmonary origin of the rôle; while many of the more recent writers and teachers, in New York at least, ascribe it to pleuritic exudation. Nearly all modern writers agree, however, in the opinion that it is not

pathognomonic of pneumonia. He then proceeded to give a *résumé* of a number of authorities, including Guttman, Eichorst and Jurgensen in Germany, Germain Sée in France, Reynolds, Samson Gemmell, W. Douglas Powell and Sir Andrew Clark in England, and Flint, Leaming, Loomis, Delafield and others in this country. He mentioned that Sir Andrew Clark, in his lectures on "Some Points in the Clinical History of Primitive Dry Pleuritis," distinctly referred the fine râles which he heard to changes in the pleura, and not in the lungs, and verified his statements with autopsies.

Dr. Jackson quoted at some length from Dr. James R. Leaming, of this city, who, as is well known, has for a number of years taught the doctrine of the interpleural origin of râles, which, although at first received with a storm of opposition, has at length been accepted, in part at least, by a considerable number of the profession. According to Dr. Leaming, the crepitant rôle, although having its mechanism within the pleural cavity, is a valuable sign of pneumonia and of phthisis, though not pathognomonic, while it may exist in the absence of both, and either may be present without it. Dr. Alfred L. Loomis, Dr. Jackson said, regards the crepitant râles heard at the end of inspiration in the first stage of pneumonia as usually due to pleuritic crepitation, and considers the rôle of pulmonary cedema as subcrepitant in character. Dr. Francis Delafield taught that the crepitant rôle is heard in pneumonia, in phthisis, and in dry pleurisy, and that it is probably a friction sound. Also that the stage of congestion in pneumonia may give a subcrepitant rôle and a crepitant rôle if there be pleurisy early, and that the crepitant rôle may persist in the stage of complete hepatization if the lung was enough.

Among the writers cited was Dr. J. West Roosevelt, assistant pathologist to the Roosevelt Hospital. In Wood's Handbook of the Medical Sciences he attributes the crepitant rôle to the three possible sources before mentioned, but regards the rubbing together of the inflamed pleural surfaces as the most common; if, indeed, it be not really the only cause. Dr. Jackson went on to say that the exact study of the phenomena of râles demands that the sound shall have been heard at the shortest possible period before death, its position on the chest wall and acoustic characters carefully noted, and then that the lungs and pleuræ be subjected to a critical post-mortem examination with reference to these data. In the cases which he has studied in this way he has found that when a fine rôle was heard, on inspiration some pleural changes were commonly noted at or near the site of the rôle, but not always of such a character as to be convincing. In an extended clinical experience, a point of view from which he said he could speak with more confi-

dence, he has noted some differences from the rules laid down in the text-books. Thus, he finds that the crepitant râle is not always persistent (sometimes disappearing and reappearing alternately in a short space of time), and the extremely fine, extremely dry sound occurring in a great number of crackles is a rare form of crepitant râle, whether associated with pneumonia or any other pathological condition. Of the brilliant, explosive, abundantly crackling type of râle, that which is slightly moist and a trifle more coarse in quality has seemed to him to be far more common, and he has frequently observed it in acute lobar pneumonia, acute dry pleurisy and phthisis, and less frequently in broncho-pneumonia,

Furthermore, Dr. Jackson has been struck with the number of patients who apply for treatment whose chief or only complaint is of pain in the chest and in whom careful examination reveals as physical signs a little dulness and a variable number of fine râles, either crepitant or sub-crepitant in character. These sounds are superficial, localized in a small area, and increased by cough or deep inspiration, and so common has he found this condition, which he regards as due either to old or recent fibrin on the pleura, or to pleuritic adhesions, that he rarely makes the diagnosis of intercostal neuralgia or muscular rheumatism. While it might be urged, he said, that these sounds are not crepitant râles, they corresponded in everything but the element of a "shower of crackles" to the definition, and they certainly constituted a very fine râle heard on inspiration. He has sometimes heard the crepitant râle persist during the second stage of pneumonia, though the number of crackles was much less than in the first stage, and in some instances it required strained attention to hear it. In conclusion, he stated that he had always regarded the râle of œdema of the lung as a subcrepitant râle of peculiarly liquid character.

In the discussion which followed the paper Dr. Roosevelt said that he had been correctly quoted by Dr. Jackson, but since the publication of the article referred to he had seen reason to modify his views to some extent. It was a matter of some importance, he thought, to understand just what was meant by a crepitant râle. If Leonard's definition was to be accepted, that it consists of a series of sharp, crackling sounds heard at the end of respiration, and apparently near the ear, it had to be admitted that the crepitant râle is met with in phthisis, in severe bronchitis, in pneumonia, in dry pleurisy, and in œdema of the lungs. As to the cause of the production of this râle, he did not feel prepared to express any opinion.

There could be no doubt he said, that there was a distinct movement of air in the vesicles. In pneumonia we talked of the solidified lung as not moving at all; but either the lung did move or else the pleura was immovable. A solidified

lung could be expanded to some extent, since the smaller bronchi occupied a considerable space. He would be inclined to deny, therefore, that the crepitant râle cannot be produced in the air vesicles. There could be no doubt, however, that the râle was also heard in pleurisy; and hence it was necessary to depend on other signs to differentiate between pleurisy and pneumonia. As to Dr. Leaming's teachings, he thought it was a great pity that so much of what was of positive value should be mixed up with that which was not proven. Frequently in the dead-house he had found the pleura perfectly healthy in cases in which a few hours before the crepitant râle was distinctly heard. Yet, at the same time, he believed that he was perfectly right in attributing the greater number of crepitant râles to the pleura.

P. B. P.

Object of State Regulation of Practice.

Dear Sir:—It is doubtful if all other combined opposition to medical legislation has, or still exerts, effects equally fatal to its success, as the one false and mistaken idea that it is chiefly in the interest of the profession itself. It has been the great argument of every nostrum nabob and medical fraud, which the promoters of medical legal reform have been compelled to confront. But when the friends and advocates of such reform in the profession, so far misinterpret its true animus, purpose and operation, as to indorse this fatal error, one is scarcely able to repress an indignant protest.

A medical society at Green Bay, Wis., in a recent report of its action, saw fit to rise from its average to aid in lifting a medical act through the General Assembly of that State the following: "Whereas, for the better protection of the medical profession," etc. Permitting the phrase, Mr. Editor, what more complete "give away" could have been perpetrated—not to say fatuous proceeding—by intelligent gentlemen, than this is? When this legislation, of which that of Wisconsin is a duplicate, is in operation, all are aware that its benefits incur to the public, as no law can be obtained whose terms do not, in a degree, brace up existing incompetent practitioners to those of the qualified profession. It must be a present sacrifice to secure a future reward. No greater success can be warranted by reason, than our ability to bar the entrance of the public sheep fold against the wolves of the quack kingdom. Those already within cannot be expelled, but must be tolerated until the elimination of time completes their removal. Attempts to cleanse the body politic from all evil of this kind, and at one stroke, has been the cause of the array of mis-carriages lining the past course of medical legal history.

Yours respectfully,

Independence, Ia.

H. C. MARKHAM, M.D.

MISCELLANY.

ON VACCINATION.—*The Bristol Medico-Chirurgical Journal*, England (March, 1889), reviewing some books on Vaccination, says: "Vaccination has got into undeserved discredit by the way in which its details have been carried out by thoughtless or careless operators. It is much to be desired that all vaccinations should be taken out of the hands of private practitioners, and allowed to be performed only by public vaccinators. The difficulties in the way of this much-needed reform could be easily overcome. Vaccination, as an important branch of preventive medicine, should be under Government inspection. Not only is there great difficulty, privately, in obtaining trustworthy lymph, often necessitating a resort to unauthorized sources, but, in deference to the sentimental objections of ill-informed parents, there are many practitioners of good social standing who are not ashamed, by vaccinating by one or two small insertions, to earn a cheap popularity, although thereby a serious danger is added to the life of a child thus made unfit to successfully resist a possible attack of small-pox. There are also doctors of a lower grade who set themselves up in opposition to the public vaccinator, and, by performing the operation for a degrading fee of sixpence or a shilling, with a vaccination also much reduced in quantity—and therefore in quality—draw off a considerable number of ignorant mothers from the Vaccination Station, the efficiency of which becomes impaired through a greatly diminished attendance seriously limiting the selection of lymph, and the proper management of which becomes wellnigh impossible.

"In the light of Marston's figures (Seaton's Handbook of Vaccination, ed. 1868, p. 216; McVail, p. 36; Woodward, p. 15), confirmed by all after-experience, conduct such as this, in various walks of professional life, seems little short of criminal, and has now reached such appalling magnitude as to urgently call for Government interference.

"If vaccination is to be a reality, and not merely something which leads its subjects into a fools' paradise, the State must ensure, by an inspection through properly qualified officials, that it is carried out in all ranks of society in a thoroughly efficient manner."

DR. THOMAS LINN, an American physician who has resided for many years in Paris, has changed his residence to No. 161 Rue de la Paix. Dr. Linn is well known as the Paris correspondent of the *Philadelphia Medical Times*.

LETTERS RECEIVED.

Mrs. Anna Gregg, Ft. Wayne, Ind.; Dr. B. A. Houser, Somerset, Ind.; Dr. Wm. Freeman, North Madison, Ind.; Chas. E. Thomas, Ann Arbor, Mich.; Dr. Boyd Cornick, Mascoutah, Ill.; Provident Chemical Works, St. Louis, Dr. Wm. B. Canfield, Baltimore, Md.; Dr. J. B. Murdoch, Pittsburgh, Pa.; Dr. J. B. Walker, Philadelphia, Pa.; Londonderry Lithia Co., Nashua, N. H.; R. W. Gardner, New York; Dr. Rich. J. Dunglison, Philadelphia; Dr. J. W. Trabert, Annville, Pa.; Dr. A. L. Hummel, Philadelphia; Canton Surgical and Dental Chair Co., Canton, O.; S. S. White Dental Mfg. Co., Philadelphia; Lambert Pharmacal Co., St. Louis; Dr. J. G. Carpenter, Stanford, Ky.; A. E. Walesby, Louisville, Ky.; Dr. H. M. Mixer, New Hampton, Ia.; Dr. W. A. B. Sellman, Baltimore, Md.; I. Haldenstein, New York; State Journal Co., Lincoln, Neb.; Dr. Karl von Ruck, Asheville, N. C.; Publishers' Commercial Union, Chicago; Henry Bernd & Co., St. Louis; Dr. Chas. H. Dalton, Boston; Chas. H. Phillips Chemical Co., New York; Dr. W. M. Harsha, Decatur, Ill.; C. A. Hamann, Philadelphia; C. D. Mansfield, Louisville, Ky.; Dr. Cyrus Kendrick, Litchfield Corners,

Me.; Dr. T. E. Porter, St. Joseph, Mo.; J. & A. R. Reid, Providence, R. I.; Drs. Gallagher and Moore, Philadelphia; Dr. R. H. Dinegar, New York; Dr. J. M. Dunham, Columbus, O.; Dr. J. L. Johnson, F. Shoemaker, Washington; Dr. E. Fletcher Ingals, Chicago; G. P. Putnam's Sons, New York; American Surgical Association; Dr. J. Chris. Lange, Pittsburgh, Pa.; Dr. Henry W. Brown, Saundersville, Mass.; Dr. Chas. F. Disen, Minneapolis, Minn.; F. M. Acree, Louisville, Ky.; Dr. H. L. Horn, Arlington, Md.; Case, Lockwood & Brainard Co., Hartford, Conn.; R. Wade Savage, London, Eng.; Dr. Henry O. Marcy, Boston; Dr. G. Fraunstein, New York; Dr. Wm. Osler, Philadelphia; Dauchy & Co., New York; J. Truman Burdick & Co., Newport, R. I.; Farwell & Rhines, Watertown, N. Y.; Edwin Rose, Buffalo, N. Y.; Reed & Carnrick, New York; Dr. G. Gundrum, Escondido, Cal.; F. A. Field, Rutland, Vt.; Dr. W. J. Asdale, Pittsburgh, Pa.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from April 20, 1889, to April 26, 1889.

By direction of the Secretary of War, the retirement from active service this date, by operation of law, of Col. David L. Magruder, Surgeon, under the provisions of the Act of Congress approved June 30, 1882, is announced. Par. 4, S. O. 94, A. G. O., April 23, 1889.

PROMOTIONS.

Col. Edward P. Vollum, Surgeon U. S. Army, promoted to Surgeon U. S. A. with rank of Colonel, from April 23, 1889.

Lt.-Col. Joseph P. Wright, Surgeon U. S. Army, promoted to Surgeon U. S. Army with rank of Lieut. Colonel, from April 23, 1889.

Major Ezra Woodruff, Surgeon U. S. Army, promoted to Surgeon with rank of Major, from April 23, 1889.

Lt.-Col. A. K. Smith, Surgeon U. S. Army, reports address of new Army Building, as at No. 39 Whitehall St., New York City. April 18, 1889.

Pursuant to instructions contained in letter from A. G. O., Washington, April 13, the following named medical officers will assemble with troops in New York Harbor on the 27th inst., prepared for field service in connection with New York Centennial parade: Major Robert H. White, Surgeon U. S. Army; Capt. Clarence Ewen, Asst. Surgeon U. S. Army; Capt. Jno. J. Cochran, Asst. Surgeon U. S. Army; and First Lieut. Chas. B. Ewing, Asst. Surgeon U. S. Army. S. O. 90, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, April 19, 1889.

By direction of the Secretary of War, Capt. Ezra Woodruff, Asst. Surgeon, is relieved from duty at Ft. Missoula, Mont., and will report in person to the commanding officer, Ft. Monroe, Va., for temporary duty at that post. Par. 14, S. O. 72, A. G. O., April 20, 1889. First Lieut. Freeman N. Walker, Asst. Surgeon, is granted leave of absence for four months on surgeon's certificate of disability, with permission to leave the Dept. of Texas, by direction of the Secretary of War. Par. 12, S. O. 92, A. G. O., April 20, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending April 27, 1889.

Asst. Surgeon Geo. B. Wilson, detached from the Naval Hospital, Mare Island, and to the "Iroquois." P. A. Surgeon F. J. B. Cordeiro, detached from the "Vandalia," and to the Naval Hospital, Mare Island, Cal. Surgeon John F. Bransford, ordered to the "Iroquois." Asst. Surgeon Edward R. Stitt, ordered to the Bureau of Medicine and Surgery, Washington, D. C. Surgeon N. M. Ferebee, ordered to Naval Academy, Annapolis, Md., for examination of candidates for admission to the Academy.

THE Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, MAY 11, 1889.

No. 19.

ADDRESS.

LICENSE TO PRACTICE.

An Address delivered to the Medico-Chirurgical Faculty of Maryland.

BY WILLIAM OSLER, M.D.,

PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY, BALTIMORE.

Mr. President and Gentlemen:—I shall not offer any apology for making the "License to Practice" the subject of my address, as it is one in which all, high and low, rich and poor, lay and professional, are deeply interested. I am fully aware that it is a subject thought to require the delicate handling which we are accustomed to give to topics arousing heated discussion, and upon which diametrically opposite views are held. Still as the question agitating the profession to-day, it requires to be persistently and thoroughly ventilated, and those who have opinions on the subject should speak out in no uncertain tones. I have not had an opportunity of ascertaining the feelings of the members of the ancient and honorable Faculty on the question, one which touches closely I believe, certain vested right of this body; but I have learned that three years ago a Bill for a State Board was rejected, so I presume the matter has often been before you. I am the more emboldened, therefore, to speak freely, knowing full well that I address men who have given time and thought to the problem, who know its difficulties, and who appreciate its importance.

In this country, a man can follow the vocation he pleases, subject only to such restrictions as may be necessary for the public welfare. The right to regulate the practice of medicine rests with the State, and, I believe it is acknowledged that this right comes within that general police power which extends protection to the life and limb of the citizens. At present, this power is very variously exercised in different States. In many, no regulations whatever exist. Any one who wishes, irrespective of qualifications, can practice. In a majority, however, there are restrictions which demand evidence on the part of the practitioner that he has studied, for a longer or a shorter period, at an incorporated school. Practically, the rule prevails that with a diploma from a chartered school, he can begin at once,

without any hindrance other than that relating to registration. The educational duties of the State do not here extend beyond the system of common and normal schools, though, in a few, higher university work is also undertaken. Special education does not receive support from the public revenues. Schools of law, medicine, engineering, theology, all the special branches of study are, private enterprises, chartered by the State and maintained by fees from pupils, or by the munificence of private friends. Certain privileges are granted to these Institutions by the State, the most important of which, in the medical school, is the recognition of the diploma as a qualification for practice. So unsatisfactory, however, has this system proved, that there is on the part of the public, and of the profession, a growing sense of the necessity for radical changes as shown by the number of States in which bills have either been already passed, or have been before the legislatures dealing with the problem.

It is universally conceded that the basis of legislation is the necessity of protecting the people against the depredations of ignorant graduates and of quacks. The aim is to divide a minimum standard of qualification to be exacted of all persons who desire to follow the calling of physician and surgeon.

While we find legislatures everywhere willing to support enactments necessary for the safety of the public, they will not, (and it is right that they should not) support class legislation; and herein lies one of the chief difficulties.

If we look around upon those engaged in the practice of medicine, we find that an overwhelming proportion belongs to the regular, or so-called old school. A second small division professes to follow the precepts of Hahnemann; while a third, still smaller, neither one thing nor the other, but a little of both, professes a judicious eclecticism. These three bodies have schools, medical journals, and in each State a more or less complete organization. In the eyes of the law (which rightly disregards medical theories), all are equal. This unhappy division of the body medical is not limited to professional matters, but is complicated with ethical questions of the highest moment. The outcome of it all has been that there are hostile camps and bitter war.

The homœopathists, and the eclectics will, I think, concur in the necessity of a full and proper curriculum of study in the great branches of medicine. Anatomy, physiology, chemistry, histology, embryology, medicine, surgery, obstetrics, gynæcology, and medical jurisprudence know no "isms." The differences only become glaring when we touch the subject of therapeutics, a subject in which among members of each of the so-called schools the greatest individual differences of opinion exist. So strong, however, is the feeling (largely an ethical one), that the divergence of opinion on this one branch separates absolutely the different classes of practitioners from each other; nor do not say that this should not be so, while antiquated dogmas are professed in opposition to a rational and a free science.

We cannot, however, escape from the important fact that in the eyes of the law we all stand equal, and if we wish legislation for the protection of the public, we have got to ask for it together, not singly. I know that this is gall and wormwood to many; at the bitterness of it the gorge rises; but it is a question which has to be met fairly and squarely. When we think of the nine or ten subjects which we have in common, we may surely, in the interest of the public, bury animosities and agree to differ on the question of therapeutics.

In connection with the licence to practice, there are, it seems to me, three courses open: 1. A continuance in the plan at present, widely prevailing, which makes the college the judge of the fitness of the candidate; and State supervision is only so far exercised that the diplomas are *vised*, and registered, if from legally incorporated schools. 2. The appointment by the State or by parties so deputed of a board of examiners which shall, irrespective of diplomas examine all candidates for the license. 3. The organization of the entire profession in each State into an electorate which shall send representatives to a central parliament, having full control of all questions relating to medical education, examination and registration.

These various places are at present in operation in different parts of the Continent; let us see how they work.

And first of the colleges which have practically had a monopoly for years, as the diploma has carried with it the privilege of registration.

To all intents and purposes the medical schools of the country are private organizations, managed in the interest of the professors, who, with scarcely an exception, have direct pecuniary interests in the size of the classes. The greater number of students and graduates, the larger the fees, and the higher the income of the teachers. The running expenses and the interest on the moneys expended for the teaching-plan are the first call, after which the balance is divided. These chartered

corporations, are wholly irresponsible, without supervision by the State, the profession or the public. It would not be difficult, without fear of just rebuke, to bring a railing accusation against them for persistently acting in their own, and not in the interests of the public. But the time has passed for this. Yet, it is surprising to think that so many men, distinguished in every way in their profession, cultured and liberal, still cling to, and even advocate, the advantages of an irresponsibility, which has made the American system of medical education a byword among the nations.

Let me not be misunderstood. These very men are, in many instances, those whom we delight to honor, with names which will last as long as American medicine. Yet, to an unbiased mind, there can be no hesitation in affirming that the system which has been permitted to develop in our midst has done, nay, is doing, irreparable wrong. But, it may be urged, on the part of the schools, that they are what the profession wishes. The stream does not rise higher than its source. I do not think that this holds good at present. It does not require a very wide professional acquaintance to gather, that there is now developing, throughout the length and breadth of the land, an earnest desire to support a higher medical education, and this is borne out by the success which has attended the tentative efforts in this direction of the larger schools, which have made a three years' college course compulsory.

Here, let me remind those doctors who talk loudly of medical reform, of the selfishness of schoolmen, of the difficulty in getting colleges to advance, that very much rests with the degree of support given by them to those schools which really make sacrifices for the elevation of the standard. If, for instance, the University of Pennsylvania or Harvard, or the College of Physicians and Surgeons in New York, or the University of Maryland, were to extend to four full years the course of study, there would be at each of these schools, without the slightest doubt, a falling off in income from the reduction in the number of students. So much so, that it would be impossible to run these larger establishments at their present full equipment. Manifestly, it would be suicidal, without the guarantee of outside aid, to imperil corporate interests of such magnitude. But, if on the other hand, those physicians throughout the country, who strongly favor a four years' course as the minimum in which a man can obtain a reasonable knowledge of the science and art of medicine, if these men were to direct their students to such institutions, (and in this matter we all know how much influence the physician has), the problem would be at once solved.

Too often college faculties seem stricken with timidity in the presence of suggestions to lengthen the curriculum and to raise the standard.

Yet, a superficial study of the history of the movement since 1871 and 1872, when Harvard so nobly took the lead, should be convincing to all that even from the lowest considerations the advance should be successful. You have but to look to the condition of the schools which have been in the van, to see that the bread cast upon the waters has already been found. I do not say that these schools are in all instances the most prosperous numerically. Heaven forbid; that is not a standard of merit. But, take the laboratory equipment, the measure in which they fulfill medical requirements, the practical teaching and the development of clinical instruction, and I say without fear of contradiction, that these schools have met with an ample and a just reward. And yet, these are the very schools which clamor loudest for further advance, showing how dangerous it is to arouse the slumbering conscience and to abandon the conviction that a two session course is sufficient for the average American student. But in spite of all that has been done, in spite of the agitation which has been so active during the past ten years, the sad truth must be told that a large percentage of doctors are graduated annually after only two sessions of study.

On paper, the two session schools almost universally demand three years; one of which, it is stated, may be with a physician. Now, it is notorious in these schools that a large majority of the men receive the degree at the end of the second college year, and it is just as notorious that not 5 per cent. of the cases in which a preliminary year of study has been passed with a physician is a *bona-fide* period of medical instruction. It practically amounts to this, that a man enters without any fair preliminary test as to elementary education, say on the first of October of the present year, and eighteen months from date, or rather seventeen months, sometime in March, 1891, he will be let loose upon the commonwealth. Eighteen months in which to master one of the highest, as it certainly is one of the most difficult of the professions which man is called upon to practice! That, gentlemen, these are facts, sad facts, each one of you knows. Yet so blind do men seem in this matter, so wedded to this pernicious system, that I have known physicians in large practice, able, cultivated men, contributors to medical literature, standing high in the esteem of their brethren, permit their sons to follow out the curriculum. Picture if you can the mental condition of such a graduate; an incoherent jumble of theories, a chaotic assortment of what he would call practical tips. But this question has its tragic side, which completely overshadows everything else. It makes one's blood boil to think that there are sent out year by year scores of men called doctors, who have never attended a case of labor, and who are ut-

terly ignorant of the ordinary every day diseases which they may be called upon to treat, men who may never have seen the inside of a hospital ward, and who would not know Scarpa's space from the sole of the foot. Yet, gentlemen, this is the disgraceful condition which some school men have the audacity to ask you to perpetuate; to continue to intrust interests so sacred to hands so unworthy. Is it to be wondered, considering this shocking laxity, that there is a wide-spread distrust in the public of professional education, and that quacks, charlatans and impostors possess the land?

But the handwriting is on the wall, the interpretation has been read, and the prophesy indeed is in course of fulfillment. It needs not the vision of a son of Beor to advertise that within ten years in scarcely a State of the Union will the degree carry with it the privilege of registration; and with this removal of the kingdom from the schools will dawn a new era for the profession in this country. This will happen when unrestricted competition between the colleges, and the total absence of professional and State restraint are things of the past.

Under the second plan the entire question of registration is placed in the hands of examiners, appointed by the Governor or by the State societies. Such a board to be effective must constitute the only portal to practice. The practical working, as shown in North Carolina, Virginia and Minnesota, presents no difficulty, and it constitutes an effective barrier against the inroads of poorly qualified graduates. Within a few years this measure will be widely adopted. It has certain advantages in a simple mechanism, and in clearly defined duties. But the powers are too limited, and there is no control of education preliminary and special, such as comes strictly within the power of the profession in each State.

The record of the Virginia Examining Board for the four years ending October, 1888, is an excellent illustration of the good which may be done. Of 240 candidates examined 54, or 22 per cent., were rejected, a percentage which might be increased considerably if practical examinations were instituted in the practical branches.

Ultimately I believe a more elaborate plan will prevail more difficult to organize, but practical and possessing the great advantage of giving the control of the profession into the hands of the practitioners, and of doing away forever with the minority rule of the college.

Theoretically, there can be no question (particularly in democratic communities) that a State board should be elective, not appointed by the Governor or the societies. An elective board is in reality a medical parliament, which should take cognizance of all matters relating to medical education, and, perhaps, though of this I am not so sure, of questions of public health within the

State. The assembly districts or other territorial divisions which might be made, would send one, or perhaps two, representatives to the board (depending upon the professional population in each district). The electors would be constituted by all practitioners irrespective of schools, which had registered at a certain date. A man who had practiced, even without a diploma, for a certain time would, under these circumstances, have to be recognized and permitted to register.

The Governor of the State would issue the first warrant for the election, which would subsequently be the prerogative of the executive of the board. It might be necessary, at first, to have, from each district, members returned from at least three of the divisions which at present constitute practitioners. The representation should be per capita, the number of constituents in each electorate to be previously arranged. The term of the board should be, at least, four or five years, and members should be eligible for reelection. Conducted by ballot there should not be the slightest difficulty in carrying out such an election. There would be, of course, active canvassing, and perhaps, many nominated from one district. Though there would be opportunities for political trickery and gerrymandering, I think, on the whole, it would be found that an election could be conducted with tolerable purity. The universities and schools would have full representation on the board. To such an organization, I believe, might be intrusted the control of all matters relating to medical education in the State. It would correspond to the law societies, and to the synods and conferences of the various religious denominations. The powers of such a board would be accurately defined by legislation, and should relate first to preliminary education; secondly, to the examination and registration of candidates for the license to practice; and thirdly, the control of all matters relating to discipline with the profession. The necessary expense would be met—first, by the fees paid by the candidates for examination; secondly, by a small annual tax levied upon all registered practitioners. Such a body could look forward hopefully to a permanent establishment in each State, with buildings suitably equipped for examination, and with every possible provision for conducting, in an orderly and systematic manner, the business of the profession.

The first important function of the board would be the regulation of the minimum standard of education required in entering the profession. It is perfectly legitimate that the profession should say, through its representatives, what should be the qualifications of a candidate who desires to enter upon the study of medicine. In law this holds good; why should it not be so with us. A guarantee of uniformity would thus be given which cannot be expected in the schools.

The examiners at the preliminary test should be independent teachers, not professional men, and the examinations could be arranged in different parts of the State. The period of study would date from the passing of this preliminary examination. Such a measure would effectually prevent the entrance of men whose education was such that they could not subsequently grapple with the subjects of professional study.

The examination and registration of candidates would constitute the most important function of the board.

Upon no question will there be a greater diversity of opinion than upon the selection of examiners. The opposition to State Boards on the part of school men is very largely based on the doubt which they have as to the selection of thoroughly equipped men for this work. On the part of the profession such a feeling exists that would prevent the appointment by the board as examiner on his own subject a teacher in any school. The difficulties, however, are not insuperable. With the proper system of numbers for written examinations, and with two examiners at every oral, there could not be the slightest objection, so far as I can see, to the selection of school men as examiners in certain of the branches. In anatomy, chemistry, physiology and pathology, that is to say in all the scientific branches, it would be almost impossible to secure from the general profession examiners with the necessary training. It certainly would be most unjust to well-equipped students from the laboratories of our first-class schools to subject them to examinations on these branches by men who had crammed on purpose from two or three of the most recent text books. On the other hand, in the more practical subjects, there are certainly in each State to be found men fully capable of conducting the necessary test work. I have the honor to know personally, in many States of the Union, men to whom I would intrust with the utmost confidence, the examination of my students in the theory and practice of medicine, and I doubt not that in surgery, midwifery, gynecology, and in the polyglot subject of therapeutics men equally able in these departments would be forthcoming.

There need not be any difficulty in the existing differences between the various schools of practice. All students would be examined in the great primary divisions, anatomy, physiology and chemistry, and so also in pathology and morbid anatomy, in obstetrics and in operative gynecology and in medical jurisprudence.

The examinations in these branches would be uniform. In therapeutics only would there be separate tests for regulars, homeopaths and eclectics. On application, the student would have to indicate for which of the three he wished to apply, and, if successful, would be placed in

one of the three divisions of the State Register. I am free to confess that this scheme may, to some, seem Utopian, but I am firmly convinced that the majority of those who hear me to-day will live to see State Boards organized on this, or upon a modified plan.

With the third function of the Board, viz, that relating to discipline, I need not detain you further than to say that in any effective act there should be penal clauses giving authority to prosecute irregular and unlicensed practitioners; to remove for cause a name from the register; and to exercise such additional powers as might, in the opinion of the framers of the bill, be thought justifiable.

Now the entire feasibility of such a scheme is illustrated by the professional history of the Province of Ontario. Up to 1865-6 a Licensing Board appointed by the State which dealt, however, in examinations only in the case of candidates without diplomas, but to all intents and purposes it was simply a Board of Registration to which holders of degrees presented themselves, paid a small fee and obtained the license. The schools practically controlled it.

In the session of 1865-6 the profession of the Province sought incorporation, and the Act was framed which, with certain important modifications, at present remains in force. It practically hands over to the profession, through the elected representatives, the management of their own affairs so far as they relate to preliminary and professional examinations and certain disciplinary enactments. In spite of the strenuous opposition on the part of many who felt that it was a most degrading thing thus to lop the important privilege hitherto held by the Universities which enabled graduates to obtain the license without further examination. In spite of dissensions and dissatisfaction, such as are almost inevitable in connection with a new organization, the Board has persisted in its good work and to-day, after 23 years of existence, it has a record of which the entire profession of the Province is most justly proud. On no point was opposition more bitter or more prolonged than on the admission to representation of members of the homeopathic and eclectic bodies. My very first introduction to the profession was a visit with my preceptor to the committee room of the House, in which certain amendments to the Act were being pushed by the colleges. I can recall with vividness the heated dispute with reference to this very question of admission of the homeopaths and eclectics to proportionate representation. It was thought to be a defilement even to come near unto the unclean thing. But wise counsels prevailed, and representation remained general, as it was, though it is true, I believe, that the eclectic body no longer has practitioners enough in the Provinces to send a representative.

The influence which this organization has exerted has been in the highest degree beneficial, and the schools now accept the inevitable with a perfectly good grace. The Board possesses a magnificent central building in which to conduct the examinations, with offices for registration and rooms for a Provincial Library. The fees from the examinations and a small annual tax levied on each registered practitioner has proved a source of ample income. The same condition, with modifications, exists in the other British Provinces.

To those who look upon such a scheme as I speak of as Utopian, and urge difficulties on account of the deeply-seated prejudices and wide dissensions existing between the schools, I might say that the condition here is practically the same in kind, though perhaps greater in degree, to that which existed in the British Provinces prior to 1866. What has been done there so successfully can be equally well accomplished in every State of the Union.

The great gain is, the public guarantee that when a man has received the license to practice, he has, at any rate, the elements of a solid education; that he knows the structure and functions of the human body; and that he is capable of meeting the ordinary emergencies of professional life. Such a plan removes the irresponsibility of the schools, establishes a uniform curriculum of studies in each, and exacts a minimum time for theoretical and practical work.

The difference is simply this, that under our present system independent and irresponsible schools have the upper hand and dictate terms to the profession and to the public, and do whatever they please. With an organized profession, through its representatives in session, the schools take the second place—they exist for the profession and the public. There can be no question as to the great superiority of this method. It is essentially democratic, and should commend itself in every particular to the profession of this country. It is infinitely superior to the second method carried on at present in many of the States, although the Examining Board nominated by the Governor or the societies are better than unrestricted registration. While the interests of corporations are fully represented in this system, they have not the overshadowing power such as was granted in Great Britain by the recent Act in which it seems almost ridiculous to think that only six representatives from the profession at large found a place in a Board, and this number grudgingly granted as a privilege not as a right.

It does not do, however, to underestimate the difficulties which have to be encountered in any attempt to organize these Boards. It may be premature in many States. The profession, I have frequently heard it stated, are not ready for this. This, from my own observation, I should

doubt. I believe the general body of the profession when it fully understands the question cannot but agree that the method is in reality a safe one. I am sure that the public, through the press, will heartily concur in any plan which will guarantee that the practitioners to whom they entrust life and limb shall be educated men.

Opposition will be strongest on the one hand from the schools, which look askance at any measure likely to interfere with their prerogatives, and on the other hand the members of the homeopathic and eclectic fraternity, not unnaturally, dread lest in any such arrangement a full measure of justice should not be meted them.

The antagonism of the schools is not, I believe, serious. To be effectual they would have to be united. It is notorious that many of the Faculties, or perhaps, more truly, many of the prominent members in each Faculty, urgently support State Boards, and a return to the old and normal condition in which a university degree partook somewhat of the nature of an honor, and had no relation to the license to practice. The opposition from the homeopaths and eclectics need not be serious. They profess to seek for better things and to look for a higher standard of examination. If we are truly anxious to deal fairly with them in a matter, not relating so much to our own as to the interests of the public, I am quite sure that we shall find them ready and willing to join hands in such a laudable work. Nor must we talk to them of concessions, but acknowledge plainly their rights, which before the law are the same as our own.

To move surely we must move slowly, but firmly and fearlessly, confident in the justness of our claims on behalf of the profession and of the public, and animated solely with a desire to secure to the humblest citizen of this great country in the day of his tribulation and in the hour of his need, a skill worthy of the enlightened humanity which we profess, and of the noble calling in which we have the honor to serve.

ORIGINAL ARTICLES.

THE BETA-NAPHTHOL VS. HYDRO-NAPHTHOL CONTENTION.

Read in the Section of Therapeutics, at the Meeting of the British Medical Association at Glasgow, August, 1888.

BY JOHN V. SHOEMAKER, A.M., M.D.,
OF PHILADELPHIA, PA.

"Who shall decide when doctors disagree?" says the poet, with as close accordance with a general truth as reason and poetry require. Yet we shall always find, even in the case of the disagreement of doctors, criteria by which rational decision may be reached. In the first place, the opin-

ions of individual doctors, as well as of persons not doctors, are not of equal weight, as emanating from men of learning, conversant with the class of subjects under consideration, and qualified to be experimentally satisfied, if question of experiment there be, of the results which they have obtained. In the next place, personal feeling and pecuniary interest may enter into the determination of questions and, giving bias, place the decider of them in a non-judicial attitude of mind. Other things being equal, the fact of the majority, and that a large majority, on one side, is an element enabling an outside investigator to reach, even amidst a mass of conflicting testimony, a verdict by which he can abide. If, in addition to acceptance of the truth of a proposition upon these general principles, we ourselves have personally investigated a subject susceptible of the test of experiment, have faithfully experimented, and have found our results to coincide with all that has been deduced by the majority of unbiased eminent experts, it is impossible for the mind to rest more securely in conviction. And this is the confidence, I confess, in which my mind reposes with reference to the contention regarding the respective merits of beta-naphthol and hydro-naphthol, for the reason that it rests upon the foundations described.

I have for several years used beta-naphthol in my practice, and coincidentally have kept myself informed with regard to the investigations of it going on in both Europe and America, growing out of the discussion concerning the relative merits of beta-naphthol and hydro-naphthol.

My first printed contribution to the subject was read on October 17, 1883, before the Philadelphia County Medical Society, and published November 3 of the same year, in *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*. My second paper was a brief one, published editorially in *The Medical Register*. My third paper was read at the late meeting of the American Medical Association in Cincinnati, and appeared in *THE JOURNAL*. In the first of these papers, written on the basis of a statement of chemical analysis by Dr. Justus Wolff, I cited many instances of treatment in my own practice with beta-naphthol, both of administration of the drug to myself personally and to patients, adding testimony in its favor from the practice of other physicians; everything pointing to the fact that it is not especially toxic in character.

The gist of my second paper was that, as Dr. Justus Wolff had gone over to the enemy, and as the contention regarding the toxic character of beta-naphthol seemed to be leading in America to little determinate results, the best way to settle the question was, I thought, to subject the action of the drug to a trial from the results of which there could be no evasion.

The third paper entered more fully into the

subject, and made one suggestion as to the cause of the impurity of hydro-naphthol. Curious to relate, it is this hydro-naphthol, which has been shown to be an impure form of beta-naphthol, that is upheld by its advocates to the disparagement of its purer representative. Now arises a question of circumstantial evidence. Who are the chief supporters of hydro-naphthol as against beta-naphthol? Undoubtedly, those persons in New York having a sort of proprietary interest in the manufacture of hydro-naphthol, and to them must be added that class of physicians which obtain their information as to new preparations from hearsay and from advertisements; the class which, having its counterpart in every profession, is that which is readiest to give certificates of excellence. It may moreover be cogently asked, What name but one, prominently associated with chemistry is also associated with the laudation of the quasi-proprietary hydro-naphthol of New York? And lastly, we may well think it strange, that this excepted chemist seemed to ascertain the poisonous character of beta-naphthol simultaneously with his discovery of hydro-naphthol, and yet that would not seem to enter into the chemical constitution of the new discovery. These facts are strange coincidences if they are mere coincidences, and do not point to underlying facts.

For the sake of argument, however, reckon them, if one will, mere coincidences, and let them be acquitted of ulterior significance if they can stand being contrasted with the facts to be mentioned. Some of the most eminent of living chemists, men who cannot by any possibility be shown to be biased in the slightest degree, either as to beta-naphthol as compared with hydro-naphthol, or as to anything else, save as concerning the searching for, finding and promulgation of the truth, emphatically declare, under the signature and seal of their own great reputations, that the vaunting of hydro-naphthol as what it has been affirmed to be by its advocates is erroneous, and as what it has been affirmed to be, in comparison with beta-naphthol, as erroneous again.

If these allegations are correct, decision must be rendered on both counts against hydro-naphthol. Mr. Merck, of Darmstadt; Professor Jacobson, of Berlin; M. Bouchardat, of Paris; the physicians of the Pathological Institute of Gießen, Germany; and Drs. Hoffmann and Endemann, of New York, represent either directly or inferentially the opponents of hydro-naphthol; and have all given the most conclusive reasons for our rejection of it.

It has been shown by them that, barring the impurity of hydro-naphthol, the difference in chemical constitution between it and beta-naphthol is *nil*. In the *Pharmaceutische Rundschau*, of New York, we Americans find, either in the original or republished form, much bearing upon the subject. In Vol. V, No. 4, p. 82 of that jour-

nal there is a long article from Mr. Merck, regarding what he describes as the so-called hydro-naphthol. In Vol. V, No. 7, p. 154 of the same journal, there is another article by him. In the first of these he gives us two pages of discussion of the subject, chemical constitution, experiments on animals, etc., concluding with the expression that danger from the application of beta-naphthol instead of hydro-naphthol is out of the question, unless it be to the profits of those interested in hydro-naphthol; that in regard to this danger it is, in the meanwhile, well for the public to know, so that no one, through ignorance of the true state of the case may be deceived by employing the falsely named, impure beta-naphthol instead of the pure ones; and that, the chemical and physiological identity of beta-naphthol with the so-called hydro-naphthol being well known, Seabury & Johnson, whether wittingly or unwittingly, have placed on the market an impure beta-naphthol under another name.

Returning to the charge, in the second article noted, Mr. Merck says flatly: "I have in this affair here said my last word, and confidently trust that thanks are due me for having contributed to the clearing up and settling of the hydro-naphthol swindle." Nothing but an *embarras de richesse* in Mr. Merck's two articles prevents me from drawing at length upon the evidence which he gives in support of his severe conclusion.

In Vol. VI, No. 2, pages 40 and 41 of the *Rundschau*, we Americans also found republished Professor Bouchardat's investigations, which are summed up in the *Pharmaceutical Record* substantially as follows: Beta-naphthol is absolutely safe in any form that it is likely to be administered. Experiments on animals prove conclusively that it would require nearly $\frac{1}{2}$ lb. of it taken internally to produce fatal results in a healthy person weighing 150 lbs. Tested by injected into the veins of animals, as a 1 per cent. solution, the amount determined as requisite to produce death in adult human being of 150 lbs. weight, was 400 grains.

Ten grains in a quart of water will prevent the growth of any organisms. It has five times the antiseptic power of carbolic acid, four times that of creosote, three times that of iodoform, five times that of iodol, four times that of naphthalin, but has only one-twentieth the destructive energy of biniodide of mercury.

Dr. Jacobson is to be found on the same side, equally determined not to lend, even by silence, countenance to a deception of the less educated among the medical fraternity, and through them, of the public. Drs. Hoffman and Endemann, writing in America, are of course best known to such physicians in that country; but if their weight is disputed, that of the other authorities cited can certainly not be impugned. I shall be forgiven, with such authorities as I have on my side, as compared with those on the other side, for

adhering to my convictions as to the merits of beta-naphthol as compared with hydro-naphthol. Contrast the following lucid statement by Mr. Louis Genois, in the *Medical Times* (American), of June 15, 1888, with that which follows it, from the pen of Dr. Justus Wolff in the *International Journal of Surgery and Antiseptics*, of April, 1888.

"Naphthols," says Mr. Genois, "are compounds derived from naphthalin by the substitution of one molecule of hydroxyl (HO) for one atom of hydrogen.

"Naphthalin is regarded as a derivative of benzol, its graphic formula representing it as two benzol rings adhering by one side. The hydrogen atoms of naphthalin are divided into two groups, in one of which they are written with a small h, and in the other with a capital H. Now, derivatives of naphthalin in which the (small) hydrogen atoms are replaced by other elements or radicals are called alpha derivatives, (such are compounds containing chlorine, bromine, nitric acid, etc.), while those in which the (capital H) hydrogen atoms are replaced by other elements or radicals are called beta derivatives. When, however, naphthalin is treated with sulphuric acid, both varieties are produced, unless very elevated or long-continued heat be applied, in which case only the beta variety results. The usual method of manufacture is as follows: Naphthalin and sulphuric acid are heated together for several hours, the mixture poured into a large quantity of hot water, the excess of the naphthalin filtered off, and the solution saturated with lead carbonate. On evaporation the beta salt crystallizes out first, the alpha salt last. The former is soluble in boiling alcohol, the latter is not; hence they are easily separated.

"From these lead naphthalin sulphonates the respective acids are prepared, and from the acids fused with an alkali, two naphthols are made—the alpha and beta, and these are the only possible naphthols. Dr. Justus Wolff, however, tells us, in his paper, above mentioned, that he has, besides the two well-known alpha and beta naphthols, met with two more naphthols similar to the above ones, but distinct from them in their chemical constitution and some of their properties and reactions. He says the four naphthols, then, are as follows: Alpha-hydro-naphthol, alpha-anhydro-naphthol, commonly called alpha-naphthol, beta-hydro-naphthol, named in commerce (that is named by himself), hydronaphthol, beta-anhydro-naphthol, called in commerce beta-naphthol."

Here is a case of disagreement among doctors, with a vengeance. Physicians quote M. Bouchardat against Dr. Justus Wolff, and in this very article Dr. Wolff quotes M. Bouchardat as verifying his results. Mr. Louis Genois informs us

that alpha and beta are the only possible naphthols, and Dr. Wolff says he has found four.

How is one to know, in these mysterious days, what is true and what is false in even chemistry? Perhaps there is some capacity in matter, even when not tenanted by mind, to cast its astral and other psychical body in a quite fortuitous manner, never to be resumed, even to the view of one versed in the most occult mysteries of esoteric Buddhism; and perhaps these hydro things may never turn up again, or perhaps they may gradually materialize from the ghost of print.

The situation amounts simply to this, that physicians who vaunt the superiority of the so-called hydro-naphthol over beta-naphthol betray their ignorance of the literature of the subject, of the fact that some of the most distinguished of living chemists have given conclusive evidence of its being an impure form of beta-naphthol, and that no one of equal authority has testified to the contrary, while at the same time there is every reason to believe that the heralding of the so-called hydro-naphthol as a genuine article, superior to every similar product in the market, is purely a commercial speculation.

My own investigations on the subject, necessarily confining themselves to the questions of reaction and physiological effects, and covering many years, have proved conclusively to me that the opponents of beta-naphthol know nothing of the subject except through venders of hydro-naphthol, whose procedure Mr. Merck well characterized in a single word. Supported in my own conclusions by the able investigations that have taken place in Europe, supplemented by those of some of my own countrymen, I am perfectly satisfied to rest the case with its mere statement.

HYDROCELE OF THE HERNIAL SAC.

*Read before the Medical Society of the District of Columbia,
January 16, 1889.*

BY THOMAS M. NORTON, M.D.,
OF WASHINGTON, D. C.

R. H., of this city, male, æt. 6 years, came under my care July 26, 1888, the following history being given by his mother: Several days previous he had fallen from a tree, but hung to a lower limb by his clothes and hands until she could run out and take him down. He complained of pain in his left groin all of the afternoon, lying down most of the time; and on putting him to bed she found a small tumor at the spot where pain was located. But thinking he had simply bruised himself, she felt no uneasiness. The next morning the tumor had disappeared; returning, however, soon after he arose, though giving him no pain. It remained all day, subsiding again during the night. Such conditions continued for several days, when she noticed the tumor was

gradually increasing in size; then for the first time becoming alarmed, called me to see him.

Examination revealed a small direct inguinal hernia, which issued from the external abdominal ring and extended about halfway to the bottom of the scrotum. Impulse on coughing was well marked, and the hernia could be easily reduced by taxis, giving forth on reduction the peculiar hernial "slip" or "flop." The gut passed through the external ring directly backwards into the abdominal cavity, not following the course of the inguinal canal to the internal ring, as it would in an indirect or oblique inguinal hernia.

It is probable the hernia had been forming behind the external ring for some time past, and was merely forced through that opening by the strain to which patient had been recently subjected. I sent him to a truss maker, who fitted him with a truss which perfectly retained the rupture. It inconvenienced him for a day or two until he became accustomed to the pressure, after which it gave him no trouble. He remained under my observation for two weeks, at the end of which time he had resumed all of his former habits, running around and playing with the neighboring children just as he had done before the appearance of the hernia.

About the middle of August he accompanied his mother to Boston, and I heard no more of the case until September 2, when I was again called to see him. His mother informed me that, a few days after arriving in Boston, he had complained one evening of the truss hurting him, but she, thinking it imagination, had made him sleep in it that night. The next morning she found the groin very much inflamed and swollen, being quite painful to the touch, and concluding the truss had slipped out of place, she readjusted it and allowed him to get up, but the pain soon becoming so intense, she was compelled to remove the truss and put him to bed. The inflammation continued for several days, but gradually subsided, leaving, as she thought, the hernia just as it was before, excepting that it did not go in during the night as it had previously done. His bowels were open all of the time, and his appetite was good, his food causing him no inconvenience.

On examination I found a small semi-elastic, irreducible tumor, about the same size and shape and occupying the same location as the hernia. Impulse on coughing was absent, nor was the tumor influenced in any way by straining movements and changes of position on the part of patient.

As there was no history of constipation or interference with the digestive organs, obstructed and strangulated herniæ were excluded, hence the diagnosis lay between hydrocele, varicocele, enlarged inguinal gland, and hæmatocele. For as both testicles were in place, undescended testis was not taken into consideration.

The regularity of the surface of the tumor, its unchangeableness when patient was in recumbent posture, and the absence of the characteristic "cordy" feeling, excluded varicocele. Its position and shape, together with the history of the case, antagonized a diagnosis of enlarged inguinal gland. When examined by artificial light the tumor was translucent, thus differing from hæmatocele, which is opaque under artificial light, as is also an enlarged inguinal gland, therefore the diagnosis of hydrocele was clear. The question then naturally arose as to whether I had mistaken a hydrocele for a hernia in the first instance, but a comparison between the former tumor and the one now present dispelled any such idea.

The first tumor gave a marked impulse on coughing, did not fluctuate on palpation, was reducible and easily retained when reduced, but returning on the removal of the obstruction, and on reduction gave forth the "gurgling" sound which characterizes a hernia; while the second tumor was irreducible, fluctuated when palpated, gave no impulse on coughing, and was translucent under the "light test."

Dr. Geo. B. Harrison kindly saw the case with me on the following day, and together we diagnosed it "hydrocele of the hernial sac." It differed from hydrocele of the tunica vaginalis or ordinary hydrocele in that this commences, as a rule, at the bottom of the scrotum and progresses upward, gradually filling the entire scrotal cavity, while the hydrocele under observation extended from the external abdominal ring to only about the middle of the scrotum, having a separate and distinct sac around which the scrotum could be freely moved.

Diffuse hydrocele of the cord extending into the scrotal cavity resembles this, but the history of the case contraindicated that affection. Moreover, in hydrocele of the cord, when examined by artificial light, the cord is seen in the tumor, and the contents of the tumor can be pressed back into the inguinal canal, returning again on the removal of the pressure; while in the case of the hydrocele under consideration the cord could be felt behind its sac external to and distinct from it, and could be traced from the testicle up to the external ring, thence into the inguinal canal beneath the neck of the sac, and no force could squeeze the contents of the tumor into the inguinal canal.

In encysted hydrocele of the cord, which is sometimes found in this location, any movement of the testicle or cord is reflected upon the hydrocele itself, and the absence of this peculiarity excluded that affection.

Advised by Dr. Harrison, I evacuated its contents with an aspirating needle, and with strips of adhesive plaster and a thin sheet of rubber placed a light compress over the sac. This was repeated several times, the sac refilling after the

operations. About twelve weeks ago, after drawing off its contents, I washed out the sac with a 2 per cent. solution of carbolic acid, since which time the hydrocele has shown no tendency to return.

The literature on this subject, so far as I have been able to ascertain, is rather brief and unsatisfactory. Drs. McArdle and Kolipinski, after carefully perusing the works of foreign as well as American authors, found recorded but twenty-nine authenticated cases of dropsy of the hernial sac. My own incomplete researches have been far less satisfactory. Wyeth, Ashurst and Erichsen mention the affection as occasionally occurring, and dismiss the subject in a very few words. Gross touches it lightly under the head of hernial hydrocele. Bryant speaks of it as a rare affection, having himself experienced but one case, which occurred in a man of 40, who for two years had been treated for hydrocele of the tunica vaginalis, and where the true diagnosis was only discovered upon post-mortem examination. Agnew, in dealing with the subject, makes the following assertion: "The neck of a hernial sac may become obliterated either from the long continued pressure of a truss, or by a portion of its contents becoming adherent to its mouth. The pouch below, being a serous structure, may become inflamed and dropsical." Accepting this statement as correct, I think the mechanism of the change from a hernia to a hydrocele in the case just reported admits of a plausible explanation.

From the anatomy of the inguinal hernia we would naturally expect to find the most constricted portion of its sac at the external abdominal ring, just as it passes between the tendinous columns which form the lateral boundaries of that opening. At the base of this opening is found the crest of the pubes, presenting a hard bony resistance against the pressure of the truss. Now the delicate tissues of the child, constricted on one side by this bony wall and on the other by the truss, became inflamed. The hypertrophied parts pressing together the sides of the corrugated neck, caused the folds to unite, thus obliterating the sac from the abdominal cavity; and the inflamed lining membrane of the sac becoming dropsical, furnished the contents of the hydrocele.

THE GEOGRAPHICAL DISTRIBUTION OF RICKETS AND CHOREA.—The report of the Collective Investigation Committee shows that rickets, though not unknown in rural regions, is mainly a disease of towns and industrial regions, and especially of large industrial towns. Chorea, like rickets, is mainly a disease of towns and industrial regions, though by no means unknown in rural districts. Its distribution is affected by that of acute and subacute rheumatism, its prevalence diminishing as the latter disease becomes rare.—*Lancet*, Jan. 19, 1889.

SURGICAL CLINICS AT THE WESTERN PENNSYLVANIA HOSPITAL BEFORE THE STUDENTS OF THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

BY PROFESSOR J. B. MURDOCH,
SURGEON TO THE WESTERN PENNSYLVANIA HOSPITAL AND PROFESSOR OF CLINICAL SURGERY IN THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

[Reported by WILL. N. PRINGLE, M.D., a member of the Graduating Class.]

October 20, 1888.

OPERATION ON A FROST-BITTEN FOOT.

We have here a patient who has had his foot frost-bitten, from which he has lost one toe by amputation, and another one has fallen off, leaving a large and very painful cicatrix. It is not many years since surgeons amputated the leg for injuries involving only the foot. It is not over fifty years since the distinguished French surgeon Velpeau advised amputation at the point of election, as it was called, for such injuries. The point of election was a point about a hand's breadth below the knee. This I suppose was owing to the fact that artificial limbs were not so well known or so much used as they are to-day, and because they only had such artificial limbs as they could use by resting the knee in a flexed position on a wooden one, allowing the stump to protrude behind. But since those days about twenty-seven different amputations have been done between the toes and the ankle-joint, chief among them being those of Hay, Chopart and Syme.

Mr. Hay's amputation is that done between the tarsal and metatarsal bones, while Mr. Chopart's amputation separates the tarsal bones, and hence is sometimes called the medio-tarsal operation. Mr. Symes' operation is done at the ankle-joint. Now all of these are good operations, but the proper operation must be adapted to the proper case; it would not be a right thing to do a Chopart's operation if a Hay's would answer as well, nor would it be proper to do a Symes' if a Chopart's operation would do as well, and if in a given case you can do a better operation than either of them there is no reason why you should follow any of them. They all have their disadvantages as well as advantages. In Chopart's amputation one disadvantage, in the eyes of many surgeons, is that all of the muscles of the anterior part of the leg are severed, thus leaving no antagonist to the action of the gastrocnemius muscle, which, by contracting, raises the heel from the floor, turning the top of the foot down, causing the patient to walk on the cicatrix. I only advise this operation where you can get a long plantar flap and need no dorsal flap. Another objection is that the arches of the foot are destroyed, and consequently the spring and elasticity is gone. Some one has said that if the tread of the foot is lost that the

amputation had better be made at the ankle-joint, because the patient must limp in any case, and that he will be able to do better work by losing the entire foot.

This is not my advice. My rule is always to save as much of the foot as I possibly can. You will find that the mortality will be less in so doing. In the case before you I will follow no particular rule, I will reflect a superior and an inferior flap, and saw the metatarsal bones off as near the metatarsophalangeal articulation as possible. In studying anatomy many students study arteries, muscles and nerves and throw away the remainder, but the man who does not understand the ligaments, nor appreciate the arches of the foot, will never make an orthopedic surgeon. True, he may be able to do some mechanical operations, but he will never understand the causes of malformations or deformities of the foot. As I remove the Esmarch's bandage I am sorry to say that I see little or no bleeding from the wound. It is a good sign to have more or less bleeding from a wound, it shows that there is vitality there, and it is evidence that there will be repair of the wound. In this, as in all other cases where practicable, I use torsion to control hæmorrhage, so that I am certain that I leave no foreign substance in the wound.

Where ligatures must be used catgut is better than silk, as it is an animal substance and is readily absorbed. It is nevertheless foreign matter, and a very prolific source of septicæmia, as it is very hard to render it aseptic and keep it so. In all cases where an Esmarch's bandage has been used there will be more or less oozing from the capillaries, and the limb should be kept elevated for from one to four hours. The oozing will cease much sooner than if it were left in a horizontal posture. A drainage-tube should also always be used, as a collection of blood and serum may create wound tension and interfere materially with repair. In about one week the drainage-tube will have served its purpose and should be removed, otherwise it becomes a foreign substance in the wound, with all that that implies.

November 3, 1888.

OPERATION ON THE ARM FOR A STAB-WOUND MADE THIRTY YEARS AGO.

We have here another case, that of a man 76 years old. He was injured in a fight thirty years ago, by the stab of a knife, the point entering the elbow-joint from behind. Since that time he has suffered almost continual pain, and it is partly to relieve this pain that we do an operation on his arm to-day. You see the joint is partially ankylosed, swollen, and deformed from chronic synovitis. I will use an Esmarch's bandage on this arm.

I do not know what may be required here until

I open the joint, but I will begin as though I were going to excise the joint. We make an incision 4 inches long on the posterior aspect of the arm and parallel with it. Two-thirds of the incision will be made over the olecranon process and one-third over the base of the humerus, clear down to the bones. The heads of the bones are then dissected out, care being taken not to injure the ulnar nerve, which lies between the olecranon process and the inner condyle of the humerus. We guard against injuring this nerve by keeping the edge of the knife close to the bone. I will remove the olecranon process with the saw and the diseased cartilage with a scraper. As I do this, however, I meet with a metallic substance, which by the aid of the forceps I withdraw with difficulty, and which, as you see, proves to be the rusty and corroded point of what was at one time an ugly, dangerous-looking bowie-knife. It is fully an inch and a half long and one inch wide at the base. It has lain imbedded in the joint of the old man's arm for thirty years, the source of all the pain he has suffered in that arm.

We cannot in a man at this age expect to secure a very useful arm. This wound will, however, I think, heal kindly, and he will have less pain, to say the least, than he has had in the past, which is a result not to be ignored.

As I explained to you last week the difference between a septic and an aseptic wound, you will at once recognize this as a septic wound, because septic materials are already present in it. As there are deep sinuses and pockets filled with this septic matter, you will appreciate the difficulty in getting rid of them. They are like yeast, if but a small number of these germs remain they will promptly multiply and infect all of the wound again. Notwithstanding this, however, we will use all the antiseptic precautions that we would if the wound were an aseptic one and will hope to get good union of the parts and a speedy closing of the wound by nature. I will also place a drainage-tube in the bottom of the wound and the ordinary antiseptic dressing will be applied, and the patient will be removed to his bed in the ward.

December 15, 1888.

REVIEW OF SOME CASES OPERATED ON.

I want to show you to-day some of the cases on whom we have done operations, in order that you may be able to follow them to their termination. The first is the old gentleman 76 years of age on whom we excised the elbow for a stab-wound received thirty years ago. You will also remember that I removed the point of a dirk-knife from the wound which had lain imbedded there for all these years. The arm, as you see, might not be considered a useful arm, but it is still much better than it was before the operation, and he has no pain, which is an item to be taken into consider-

ation. This is the oldest case of excision of the elbow of which I have any knowledge.

Another case I want to show you is that of the man for whom we excised a knee-joint in the early part of the course, this year. You see he is able to walk around and has a very useful limb. He will leave the hospital in a few days. You see, as I manipulate the limb, that there is perfect ankylosis at the knee, the tibia and femur are practically one bone. You have seen several operations of this kind this winter, and they are operations that I think we should feel proud of, because they are much better than amputation, leaving as they do limbs which are so much better than any artificial appliances.

March 2, 1889.

Before bringing a patient before you this morning, let me read to you a letter from our old friend Thomas Cavanagh, upon whom you saw me do excision of the knee-joint early in this session. I read this letter in order to make the history complete.

DuBois, Pa., Feb. 26, 1889.

Dear Friend :—With the greatest of pleasure I must let you know that I am walking without crutches or cane. It was on the 5th of February that I walked. I was very much surprised at myself when I done it. From the day that you operated on my knee till the day I walked was 4 months and 8 days. How is that for an old man? Therefore I thank you most respectfully for your skillful operation on me. Doctor I must let you know that I have had no pain in it since I left the hospital, and if I live till the 4th day of July I will go and see you. You can use this letter any way you like.

Therefore I remain yours truly,

THOS. CAVANAGH.

Dr. J. B. Murdoch, Pittsburgh, Pa.

MEDICAL PROGRESS.

PHENACETINE.—Apparently one of the best of the modern antipyretics is a substance described by Hinsberg and Kast as para-acetphenetidin, a substance analogous as regards its chemical constitution to antifebrin. We have already a number of times alluded to the properties of this substance (*Therapeutic Gazette*, 1888, pages 43, 142, 699), and although the testimony as to the action of this preparation as an antipyretic and antineuralgic appears to be unanimous as to its value and freedom from danger, it has attracted no attention among English-speaking members of the profession. This preparation, phenacetine, as first prepared, was a reddish, odorless powder, insoluble in water and in glycerine, and thoroughly soluble in hot alcohol and alkaline liquids. It has been recently prepared in colorless, crystalline needles, which are claimed to be soluble in acetic and lactic acids, and in hot oils. Extended experiments on dogs and rabbits have

shown that it is almost inert in doses of from 15 to 30 grains given daily for days at a time. When the dose is increased up to 45 and 75 grains in large dogs it produces accelerated respiration, sleepiness, disturbed coördination, and vomiting, and, in still larger doses, methæmoglobin is produced, as in antifebrin-poisoning. Even after this symptom has appeared, however, recovery has almost invariably occurred. Dr. Hoppe (*Deutsche Medicinal Zeitung*, No. 92) has made a number of experiments on man, administering doses of from 15 to 40 grains, and has found that after a time the system becomes accustomed to the remedy. The only disagreeable effects produced by these amounts were sleepiness, dizziness, nausea, and slight chilliness, the temperature, as consequent on doses of 30 grains, being reduced only a few tenths of a degree Centigrade. It appears, therefore, to be almost free from toxic properties, while his experiments made in the Jewish Hospital in Berlin, have confirmed the result of the experiments as already published by other observers. It has proved absolutely harmless, the only disagreeable after-effect being profuse perspiration, ringing in the ears, followed by weakness, and only in individuals already depressed by disease. As an antipyretic in children, doses of about 2 grains reduce the temperature from 1° to 2° C., a single large dose producing more effect than repeated small doses.

Led by the analogy of phenacetine in composition to antipyrin and antifebrin, Dr. Hoppe has likewise tested the properties of this drug in twenty-five different forms of neuralgia, in the majority of which relief of pain followed its employment. Various cases of headache were also relieved by its use within half an hour to an hour; and he believes that in neuralgia, as in febrile disease, it is equally as efficacious as antipyrin, and is preferable to it on account of its freedom from danger.

Dr. Rumpf (*Berl. Klin. Wochenschr.*, No. 23, 1888) likewise experimented to a considerable extent with phenacetine as an antipyretic and in the treatment of neuralgia. Dr. Rumpf believes that as an antipyretic it is as active as any yet introduced, since he has found that a single dose of 15 grains given to adults may reduce the temperature in the febrile state from two to three degrees in two hours; even half the dose has produced the same effect with no disagreeable complications. In eight cases of hemicrania doses of 15 grains produced great relief, while in seven cases of neuralgia of different nerves it has likewise been very satisfactory. Dr. Rumpf describes phenacetine as a drug which, in doses of 15 grains to adults or 3 grains to children, is an absolutely safe, reliable, and satisfactory antipyretic; while in doses of 15 grains it is highly recommended as an antineuralgic remedy in all cases of vaso-

motor neuroses, in the lancinating pains of tabes and the neuralgias of chronic neuritis.

Drs. Misrachi and Rifat (*Bulletin Gén. de Thérapeutique* June 22, 1888) have confirmed in all respects the statements which we have already published as to the action of this remedy. It is these authors who have determined the solubility of phenacetine in lactic acid. They have found that this solution is not disturbed by the addition of water as long as the temperature does not fall below 33° C. It is evident that this discovery is a great addition to the practical value of this remedy, since its high insolubility has been the principal objection to its use in therapeutics. After the administration of the lactic acid solution it is rapidly absorbed, and has been capable of detection in the urine.—*Therapeutic Gazette*, March 15, 1889.

BAKTERIOSKOPY AS AN IMPORTANT CRITERION FOR THE DIAGNOSIS OF MENINGITIS CEREBRO-SPINALIS.—PROFESSOR BOZZOLO, in the Reale Accademia di Medicina in Turin, makes an interesting communication which shows how bacteriological investigation may become an important aid in clinical diagnosis. The case concerned a man 54 years of age, suffering from acute fever with chills, from icterus, pains in the back of the neck, delirium and vomiting; the patellar reflexes were missing, and the spleen and liver were enlarged. The existence of pneumonia was excluded by the lack of the necessary physical symptoms in the lungs. On the ninth day of the disease an explorative puncture of the liver was made; by the cultures made with the extracted blood and by vaccinating mice and rabbits the presence of the diplococcus pneumoniae was proven. Thereupon the diagnosis "meningitis cerebro-spinalis" was made. Patient died, and the post-mortem confirmed completely the diagnosis. Besides a diffuse meningitis there was endocarditis of the aortic-valves and abscesses of the liver in consequence of biliary calculi. Bozzolo emphasizes the importance of bacteriological investigation of the blood in doubtful diagnosis, and mentions a very simple method of investigation invented by his clinical assistant Dr. Belfanti, which makes it possible to recognize to a certainty, the presence of the diplococcus in the blood of patients. It consists in the following: By tapping a vein, a small quantity of blood is taken from the patient, transferred to a thermostat, heated to 37°, and left in it for ten or twelve hours. If the diplococcus existed in the blood, numerous colonies of this microorganism will be seen developing on the coagulum.—*Internationale Klinische Rundschau*, 1889, No. 13.

TWO CASES OF FRACTURE OF THE SPINE TREATED BY TREPHINING.—MR. HERBERT ALLINGHAM at a meeting of the Medical Society of

London, read notes of two cases treated at the Great Northern Hospital last year. J. A., æt. 31, was admitted in July, having fallen 40 feet, causing a fracture of the spine. He was paralyzed from below the level of the ensiform cartilage. As he did not improve, in fact, seemed to lose ground, Mr. Allingham trephined the spine through an incision ten inches long. It was seen that the lamina of the sixth vertebra was badly fractured and depressed. He therefore with the bone forceps snipped off the laminae and spinous processes of the fifth, sixth, and seventh vertebrae, exposing the cord for about four inches. The operation took an hour and a half, and the wound was dressed antiseptically. Healing had taken place in about ten days, and the symptoms of ascending changes checked. Some amount of improvement subsequently took place, the level of the paralysis being brought down to the umbilicus. Case 2 was brought to the hospital in August, on account of a fall. She was paralyzed from a level seven inches above the umbilicus. Six days later Mr. Allingham removed the spinous processes and laminae of the third, fourth, fifth and sixth vertebrae, and as the cord was found to be crushed the dura mater was opened. The wound healed up except in the track of the drainage-tube in about a fortnight. The patient, a woman, died seven months later from bedsores, cystitis, etc. The cord was found to be almost divided, both ends tapering down to a fine point. Mr. Allingham concluded (1) that by timely trephining inflammatory ascending changes were prevented; (2) that no bad symptoms followed the laying open of the spinal dura mater; (3) the operation, although tedious, was not difficult, and did not lessen the chance of recovery. DR. MACKENZIE said the fact had recently been established that the spinal column could be opened and examined without much danger, and, where nothing was discovered, the injury inflicted was capable of rectification and the patient was given the best chance of recovery. That was of far more importance than the success of the first two or three operations, since it established the principles upon which future progress could be accomplished. He suggested that Dr. Beevor might be able to elucidate the changes that had taken place in the cord, which were relieved by the operation. DR. ROUTH mentioned two cases in which effusion into the spinal canal had been diagnosed, and in which death had taken place because no one was prepared to undertake to tap the canal. DR. BEEVOR alluded to the difficulties that arose in consequence of the fact that the anæsthesia began much lower down than the seat of injury would lead one to suppose. The same difficulties had been met with when Mr. Horsley operated for the removal of a supposed spinal tumor. He said that the question as to the points in the cord at which the sensory fibres

were given off required elucidation. He mentioned a case in which it was clearly shown that the nerves of tactile sensation were distinct from those which conveyed painful impressions. MR. BALLANCE said he was present at the operation performed by Mr. Horsley, and mentioned the difficulty which had arisen from their not knowing the precise spot at which the sensory nerves were given off from the cord. That point had since been worked out by Mr. Shattock and others, and they were fairly agreed at present as to their origin. In Mr. Horsley's case he removed the laminae of four vertebrae without finding anything, but on the removal of a fifth they fortunately came upon the tumor, and the operation had proved successful. He congratulated Mr. Allingham upon the results he had obtained. He himself had seen a good many cases of fracture of the spine, but he had not treated them in the way suggested by the author. He observed that the great difficulty was to know how far the cases would recover without any interference. He supposed that Mr. Allingham would not advocate the operation being performed at once and in every case. He thought the safest plan would be to immobilize the fracture by a plaster-of-Paris jacket for a few days, until they could see what improvement was likely to take place. MR. ALLINGHAM, in reply, said he would have liked to see the cases mentioned by Dr. Routh. He had been struck by the fact that the operation did not affect the patient injuriously in the slightest degree. With reference to the time of the operation, he said he thought it ought to be done early, and his plan was to wait—say a week—and, if no sign of improvement was manifested, to operate. Delay always led to changes being set up in the cord.—*British Medical Journal*, April 13, 1880.

CHANGES IN THE BONES IN OLD AGE.—In the *Illustrated Medical News*, March, 1889, page 193, Prof. HUMPHREY contributes an article on the changes in the bones in old age, and illustrates his remarks with some valuable illustrations. To the naked eye these changes consist in an absorption of the cancellous structure, commencing in the parts which are most cancellous, that is, where the bony plates are thinnest, where the marrow is most abundant and most vascular, where the leucocytic and other agents in absorption are most abundant, where, accordingly, we might expect the processes of absorption to be most ready to take advantage of any failure in the nutritive and resisting qualities of the bony tissue. In the early condition the several parts of the skeleton are solid; as they become hardened and added to at the exterior, they become hollowed out in the interior into cancellous spaces, medullary canals, and air-containing cavities; this change continues through life in gradually diminishing degree; and

as old age advances, the subtraction from the interior exceeds the addition to the exterior, and the bones gradually decrease in weight and strength. The muscles at the same time become weaker, so that it is almost as rare to have a spontaneous fracture of a bone from muscular action in old age, as it is in youth or middle age. The author shows by diagrams how in old people the head of the femur becomes thinned and liable to fracture. This predisposition to absorption in the cancellous parts is met with in the ends of the long bones in all aged people, which causes their liability to fracture. The tendency to absorption of the cancellous parts of the skeleton is also seen in the alveolar processes of the jaws, whereby the teeth are loosened and often drop out. In the body of the lower jaw these changes are very marked; the thin lower bar alone remains with the mental foramen upon or near the upper edge; in the upper jaw alveolar processes become, in course of time, completely cleared away; the level of the palate is continued to the margin of the bone, the whole maxilla (the walls of the antrum more especially) becomes very thin, and the nasal spine and the cheek-bones are left outstanding in relatively strong relief. An exception to the progressive cancellous absorption and diminution of weight in the bones of old people is not unfrequently to be found in the skull, more particularly in the calvarium. This part in some cases becomes very thin and light; in others it becomes thicker from deposit on the interior consequent probably on the lessening of pressure upon it associated with the brain-shrinkage of age; in some of these latter cases it is very porous, the *diplœ* being increased; in others, however, it is dense and heavy, as well as thick, the *diplœ* being encroached upon and perhaps obliterated. The contrast in some cases presented by the thick heavy calvarium, and the thin light facial bones, is very striking; the skull of many old people weighing many ounces over the average, and this is due to increased thickness and density of the bones enclosing the cranial cavity. This senile thickening and "senile sclerosis" differ from the changes in osteitis deformans, inasmuch as they affect the interior of the skull and the *diplœ* rather than the exterior. So far as the author knows, the cranial wall is the only part of the skeleton in which this process occurs. The increased density and weight of the skull when the rest of the skeleton is becoming less fitted to bear weight is a strange and not easily intelligible anomaly.—*London Medical Recorder*, April 20, 1889.

THE DURATION OF LIFE IN CANCER OF THE BREAST.—The average duration of life in cases of mammary carcinoma is very variously estimated by different observers, ranging from 28 to 55 months in those not operated upon, and from 32 to 53 months in cases in which the new growth

has been removed by the knife. Thus Gross, whose statistics are among the least hopeful, gives as the average duration of life, of those in whom the disease had been permitted to run its course, 27.1 months, and of those operated upon about 39 months. Sibley's figures for the same classes of cases are 32.25 and 53.2 months. Baker makes the average, for cases uninterfered with by operation, 43 months, while Paget's estimate for the same class of cases is 55 months.

By far the most hopeful figures which we have seen are some given by Mr. W. R. Williams, in *The Lancet* of January 12, 1889. He has recorded and tabulated all the fatal cases of cancer under treatment at the Middlesex Hospital during the last six years, with the result that the average duration of life, dating from the time when the disease was first noticed, was 60.8 months for those who had undergone operation, and 44.8 months for those in whom the disease ran its natural course. The longest duration of life when the breast was amputated was 297 months, and when no operation was performed 194.7 months. The author thinks that his statistics justify surgeons in taking a less despondent view of mammary carcinoma than is ordinarily taken.—*The Medical Record*, March 30, 1889.

CHARCOT ON SUSPENSION IN THE TREATMENT OF PROGRESSIVE LOCOMOTOR ATAXY.—PROFESSOR CHARCOT recently gave a clinical lecture on vertical suspension of the body in the treatment of progressive locomotor ataxy and some other diseases of the nervous system. This novel method of treating tabes dorsalis was first initiated by Dr. Motchoukowsky, of Odessa, who published a *brochure* on the subject in 1883; but it received no attention in Western Europe till 1888, when Professor Raymond, of Paris, while on a scientific mission in Russia, was struck with the results presented to him. Dr. Ouanoff, his fellow-traveler (a pupil of the Salpêtrière clinic), showed his practical application there. In Motchoukowsky's pamphlet considerable improvement was ascribed to it in twelve tabetic persons; also in various neurasthenias, independent of tabes, in which the sexual functions were reëstablished by this treatment. The patient is suspended for about three minutes by a Sayre's apparatus, and the arms of the patient while suspended are raised every fifteen or twenty seconds to increase the traction on the spinal column.

Charcot's tabetic patients numbered eighteen, with 400 *séances*. Of these, four were only suspended each three times; the rest went on regularly. Of these Professor Charcot says: "The remaining fourteen have experienced in varying degrees an improvement, which in eight has been quite remarkable." All were pronounced tabetics.

Walking is improved to begin with; the patients say they can walk better after the first suspension. This improvement at first lasts only a few hours, but after eight or ten sittings persists. After twenty or thirty sittings Romberg's sign disappears. Then vesical troubles are lessened or removed; also the lightning pains. Sexual impotence gives place to sexual desires and erections. (Experiments by Dr. Ouanoff on healthy persons have shown that this method has an exaggerating effect on virility.) The cotton-wool feeling in the feet gives away more or less to healthy sensations, and in general the whole health improves. Every patient steadily improved, with one exception, a young tabetic, aged 32, who at first improved, then fell off, then again improved somewhat. But the knee-jerks have not reappeared in any of the patients after three months' treatment, nor are the pupillary symptoms altered. As to other diseases, a young female with Friedreich's disease was greatly improved by the treatment. In two neurasthenic and impotent patients the sexual functions were reëstablished. But a patient with disseminated sclerosis was made worse, for after two sittings a spasmodic paraplegia appeared, which, however, gave way in three days. Further trial of this method is required before an opinion of its value can be given. The results are most encouraging so far, and at any rate perfectly harmless.—*London Medical Recorder*, March 20, 1889.

ON THE TREATMENT OF RENAL COLIC.—DR. CHRISTOPH, of Constantinople, was called, some time ago, to the wife of a Jewish banker, who suffered from renal colic and had been treated for three months by the best physicians with chloral hydrat, antipyrin, morphia and lythium benzoate. The woman is 23 years of age, weak, without children although married three years, extremely nervous, which is inherited from her father, who is afflicted with cramps and nervous diseases. In the urine gravel and calculi were found, which chemical analysis proved to consist of urates. Despite daily doses of 5 centigrams of morphia she had constant pains, which deprived her of sleep during the night, impaired digestion, and still more shattered her nervous system. In view of the unsuccessful analytic therapy he remembered having read in Frerich's well-known work on liver diseases Trousseau's prescription for renal colic, consisting of inhalations of chloroform at every attack of pain. To his agreeable surprise the patient informed him, on a subsequent visit, that she was entirely free from pain after inhaling for twenty seconds, and that she had been obliged to repeat the inhalation only three times during the day. Later on he alternated between this remedy and butylchloral, 5 grams in 120 grams of water, with 10 grams of spir. vini rectific. and 20. gr. glycerine, of which 2 or 3 tablespoonsful

daily, taken quickly one after another, relieved her immediately, or between chloroform and urethan, 3 or 4 gr. daily. To dissolve the stones he added daily 3 teaspoonfuls of magnesia bor. nitr. with sugar dissolved in water.—*Internationale Klinische Rundschau*, 1889, No. 13.

ON SECONDARY INFECTION IN SCARLET FEVER.—DR. MARIE RASKIN, of St. Petersburg, from a series of clinical and experimental investigations, draws the following conclusions: 1. The malignant complications occurring in scarlet fever: lymphadenitis purulenta, phlegmone, otitis purulenta, synovitis purulenta, broncho-pneumonia, pleuritis, pyæmia and septicæmia, perhaps also diphtheria and serous synovitis, are caused by a secondary streptococci infection, other microorganisms possibly having a share in the origin of some of the above processes, as pyogenous staphylococci in otitis and micrococcus pyogenes tenuis in pyæmia. 2. The introduction of the streptococci occurs through the primarily inflamed throat, whence they extend through the lymph channels and thus get into the blood. 3. The streptococci having invaded the blood there are three possibilities: *a*, the cocci may disappear from the blood without any consequences except more or less fever; *b*, they may increase rapidly in the organs and cause death by general septic infection; *c*, often they may cause death by pyæmia. 4. The chain coccus occurring in scarlet fever may be regarded as a variety of the well-known streptococcus pyogenes. 5. It is not the cause of scarlet fever.—*Centralblatt für Bakteriologie und Parasitenkunde*, 1889, No. 14.

ON THE VALUE OF INHALATIONS OF HYDROFLUORIC ACID IN TUBERCULOSIS OF THE LUNGS.—DR. L. POLYAK, in the Society of Physicians in Budapest, declares that by abundant experience with this new mode of treatment, he has arrived at the following conclusions: 1. The bacilli in the sputa increased in every case. 2. The lung-affection grew worse in every case; in three cases the infiltration increased, in two cases considerable disintegration took place. 3. The body-weight decreased in four cases by 0.5–3 kilogr.; in one case it increased by 0.5 kilos., but the other symptoms became worse. 4. In two patients before the inhalations only moderate increase of temperature occurred; during the cure considerable increases in temperature were observed; in a third case the fever increased. 5. In four cases the vital capacity decreased by 100–600 cm.; in one case it increased by 100 cm., although in this case infiltration made progress. 6. The mode of cure is certainly harmful, inasmuch as patients have to stay in a small enclosed room for a long while whose air is not in keeping with the demands of hygiene. From all of which it is seen that these inhalations are not only, not

beneficent, but absolutely harmful.—*Wiener Med. Wochenschrift*, 1889, No. 13.

INCREASE OF BODY-TEMPERATURE AS A PARTIAL SYMPTOM OF VIS MEDICATRIX NATURAL.—DR. DOCHMANN (Kersan) declares that in infectious fevers the increase in body-temperature should not be considered *a priori* as harmful, but that it probably rather contributes to render the infectious virus harmless. He reports independent experiments of his own which seem to support this, so far, but hypothetical view. When cats that had been poisoned with curare, were put into the thermostat and subjected to an artificial increase of warmth, they recovered rapidly from the intoxication, which was not the case in animals kept in a normal temperature. In view of the close toxocological relationship between curare and various ptomaines, the significance of these experiments for the question under discussion cannot be overlooked. Similar results were obtained by Dochmann with animals into whom decomposing substances had been injected.—*Wiener Medicinische Wochenschrift*, 1889, No. 13.

ETIOLOGY OF TETANUS.—M. VERNEUIL, in a paper read before the French Academy of Medicine, dwelt upon the virulence of soil contaminated by the dejections of tetanic horses. He insisted on the frequency of tetanus in wounds of the lower extremities; thus, in Havana, out of 162 patients suffering from tetanus, 132 contracted it from wounds on the legs and feet. The disease is frequent in persons who, after being wounded, get in contact with the soil, as in cases of comminuted fracture, in which the bones are forced into the ground, and crushing of the bare feet; also when earth is used as a dressing, and when the wound is inflicted by an agricultural implement. Experiments made with ordinary soil and soil known to be contaminated strongly support this view. Certain soils seem to preserve their virulence much longer than others, and stagnant water seems to favor the proliferation of the microbe.—*London Medical Recorder*, April 20, 1889.

CANNABIN IN GRAVES' DISEASE.—VALIERI, after using cannabin in three cases of exophthalmic goitre, recommends the following formulas:—

- | | |
|--|-----------|
| Cannabin | gr. iv ss |
| Sugar of milk, q. s. | Mix. |
| Make 5 pills. | |
| S. To be taken in 24 hours. | |
| Cannabin | gr. iv ss |
| Distilled water | ijj |
| Syrup of orange flowers | 3 j |
| S. Take in teaspoonful doses in 24 hours | Mix. |

Or we may prescribe a decoction of 2 or 4 tooth parts, or doses of \mathfrak{m} 15 or 30 of the tincture.—*Wiener Medical Presse*, No. 41, 1888.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WARASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, MAY 11, 1889.

ETIOLOGY OF INSANITY.

We are indebted to the *Occidental Medical Times* for advance sheets containing a good abstract of the proceedings of the California State Medical Society, in San Francisco, April 17, 18, and 19, 1889. The report of a Committee on Mental Diseases and Medical Jurisprudence, was read by Dr. J. W. ROBERTSON of San Francisco, in which he discussed at some length the causes of insanity, and especially the influence of civilization and mental culture. The assertion has been often made that insanity in its various forms, is decidedly increasing beyond the ratio of increase of the population, in all the more civilized countries. But the report says, "if there was any actual increase in the numbers of the insane, relatively, throughout the whole civilized world, statistics have failed to show it." It is suggested that the apparent increase is owing largely to the greater attention given to the insane during the present century. The building of asylums and homes for their humane treatment, and their more careful enumeration in each succeeding census, with less motives for their concealment by friends, have caused the true number relative to the whole population, to be ascertained more accurately. The more detailed and complete census enumerations have also offered better facilities for ascertaining the relations of the various occupations and classes of people. Whether civilization actually exerted any intrinsic influence in the production of insanity, Dr. Robertson expresses serious doubt. The two most prominent factors belong-

ing to higher civilization, are heredity and education with its more intense activities. Regarding the first, it was stated that the records of the Napa Asylum embraced 4,280 cases of insanity, of which 213, or only 5 per cent. were attributed to hereditary influence. Of the whole number recorded at Napa, 2,700 were males, only 33 of whom were professional men, and only 230 who could be regarded as belonging to the educated classes; 450 were classed as artisans, and the remaining 2,000 were laborers or without active occupation, and very largely of foreign birth. It was stated in the report that, "a large foreign population and a large insane population go hand in hand; and the foreigners in this State, (California) who constitute one-third of the population, furnish two-thirds of the insane." Dr. J. H. Brainard, of Los Angeles, stated that he had examined the record of some 8,000 cases of insanity with reference to the influence of education or brain work, and he found that the professions had but a very small representation, the laboring classes being in the proportion of 90 per cent.

Dr. G. W. GRAVES, of Petaluma, had been engaged in the examination of persons charged with being insane, for near twenty years, during which time he remembered of but one subject who was a professional man. While the facts given in the report of Dr. Robertson and those elicited in the discussion following the reading of the same, show that in California the ratio of the insane to the whole population is one to three hundred, and that three-fourths of the insane belong to the class of least education and mental activity; the same relative ratios do not prevail in all the States. Yet, it is true in all the States, that much the highest ratio of insanity is found in the laboring classes of limited education, both native and foreign; while the lowest ratio is found in those of the most extended education and most active intellectual work. Consequently it is fair to infer that the progress of civilization, so far as it relates to the development of the moral and intellectual faculties, and the advancement of all the sciences and their application to the arts and the various departments of human industry, has no tendency to derange the mental faculties or to increase any of the forms of insanity. And it is probable that so far as the number of insane has increased faster in population than the increase of population, in this

country, such increase is owing entirely to the large annual immigration from the poorer and least enlightened classes of Europe.

But while the advancement of true civilization with its ever increasing and varied mental activities, affords no proof of being a direct cause of insanity, its influence in strengthening the ambition of even the least enlightened classes for more wealth and better social position without removing from them certain habits and vices that are ever mocking their ambition and defeating their efforts, while stealthily undermining their physical health, may be justly regarded as an efficient though indirect cause of insanity.

There is no condition of the human mind that more strongly predisposes to insanity than protracted *anxiety*, which consists in a more or less intense desire for the accomplishment of a certain object coupled with a constant fear of failure. The ranks of the great laboring classes, especially in this country, are full of individuals and families inspired with the anxious desire to improve their pecuniary, social and educational condition, but whose baser passions and vicious indulgencies either absorb so much of their earnings or tempt them into such unlawful acts, as not only disappoint and disgrace the man, but send the arrows of long dreaded disappointment and despair deep into the minds of the wife and children. One of the most prolific causes of intense and continued anxiety, ending often in both physical and mental ruin, is the use of alcoholic or fermented and distilled drinks that takes directly from the earnings of labor in this country more than \$500,000,000 annually, and brings the most intense and protracted anguish to the minds of many thousands of innocent parties. In regard to this one influence, Dr. Brainerd, in discussing the report of Dr. Robertson, made the following statements: "Regarding alcohol it is difficult to obtain the figures. The statistics ordinarily obtainable were those from patients sent to the insane asylums. From these you could not find more than *one* case in *ten*. On getting the histories of the cases we find that alcohol as a direct cause does not play so important a factor as it does as an *indirect* cause. He had investigated some 90,000 cases, and found that the percentage attributable to alcohol was less than 8 per cent. His own experience in some four or five thousand cases satisfied him that the indirect

proportion with which alcohol should be credited was nearly 16 per cent.; and some even placed it as high as 25 per cent." It is thus seen that these very cautious inferences make the direct and indirect influence of alcoholic drinks the cause of 25 per cent. of all the cases of insanity in this country.

TYPICAL FORMS OF DISEASE MODIFIED BY CLIMATIC AND LOCAL CONDITIONS.

Apropos to the remarks of THE JOURNAL in its issues of April 13th and 20th, on the "Preferable Climate for Phthisis," brought out by the paper of DR. DENISON, it now extends its consideration of climate so as to include its modifying and typifying influences on diseases generally, and on some of the more prevalent diseases of given localities particularly. Much may be gained by a careful survey of the changing and varying types of diseases prevalent in our respective fields. A careful retrospective study of the various potencies which may have played a more or less important part in stamping prevailing diseases generally with their peculiar types, is productive of great good. We may look over the field of battle after the smoke and din have gone, and note with much clearer sight the relative position of the forces employed, than could have been done during the strife; and so it is with our struggles with disease. We may profit much by the study of past experiences.

Take, for illustration, typhoid fever as the disease, and take New England, Pennsylvania and Ohio for one part of the field, and Illinois, Iowa and Nebraska for the other part, the same observer transplanted from the former part of the field to the latter will be strongly impressed with the marked differences of type of the disease in question, as observed in different parts of the field. He sees it in one locality a *typical* disease; he sees it in another locality an *atypical* disease. Why the difference? There can be no doubt as to the identity of the disease in the two parts of the field; but the difference in type is striking and perplexing. We turn at once to climatic influences for a solution of the problem. In this there are many factors. Each plays its peculiar rôle in the typification of diseases. There can be no doubt about that. Impurities of atmosphere are many and dependent on a

multitude of circumstances. In this the nature and composition of the soil, its state, as to rest or disturbance, has much to do with the purity of the atmosphere in any given locality. In the eastern end of our field the soil abounds in good clay, sand and rock, and in the western end a deep, black vegetable loam prevails. This loamy soil is abundantly productive, and the great ease with which it can be brought under cultivation, makes agriculture on an extensive scale possible. Hence the area of soil undergoing the agitation incident to grain culture is comparatively very great. Our knowledge of the nature and character of malaria is as yet limited, but whatever it may be, we know that it thrives best on decomposing animal and vegetable matter; that it requires certain degrees of heat and moisture for its greatest activity. Hence we have in the western end of our field the conditions prevailing which most strongly conspire to impregnate the atmosphere with malaria.

In this, facts comport with theory. We have in this part of our field a *malarial climate*. This makes itself manifest in a multitude of ways. At times, and in certain localities, malarial diseases prevail to a large extent, at other times and in other localities it requires other disturbing influences to bring to the surface evidences of its activity.

Perhaps it may be a wound of inconsiderable gravity, but sufficient to make its shock felt throughout the fabric; perhaps it may be the disturbance incident to child-birth; or the commotion which obtains in acute rheumatism; or the much greater molecular disturbance which obtains in typhoid fever, the effect is largely the same. Sometimes a comparatively slight injury to an important joint, such as the hip, knee or ankle, the shoulder, elbow or wrist, the shock, though slight it may be, resulting from such violence may develop into symptoms of an alarming nature and embarrass the surgeon greatly. But when the malarial factor is once recognized and taken fairly in hand, the progress and history of the case to a successful issue is simple enough.

The puerperal woman may at any period of the lying-in state manifest symptoms of an alarming character; she may have had a severe chill, followed by high temperature, copious perspiration, great exhaustion, and all the symptoms usually attendant on puerperal fever. A prompt recogni-

tion of the malarial character of the complication, and the employment of appropriate therapy will dispel consternation and guide the patient to an early and safe recovery. On the other hand, a mistaken diagnosis will increase and intensify the complication.

A case of acute articular rheumatism may present a marked set of symptoms, but if carefully analyzed and interpreted, and the appropriate anti-malarial remedies employed, the complications disappear and the case proceeds to an easy and successful termination.

Typhoid fever occurs in a community, the symptoms are not regular, there are no typical cases, all of a mixed or masked character, all run an irregular course, yet all are of unmistakable typhoid origin, all manifest some of the regular symptoms of typhoid fever, none however have the full measure of typhoid characteristics, and none present more than one, or at most two, unmodified typhoid features.

Complications of rare and unusual character occur; one line of complications prevailing in one locality, and another set entirely different obtaining in another.

In a circumscribed district hæmorrhage from the intestinal tract may prevail to an alarming extent. Perhaps two out of five cases may present this fearful and largely fatal symptom. In another district, it may be at no very great distance from the former, inflammation and suppuration of the parotid gland may be the predominating complication, this untoward feature of the malady occurring in a large percentage of the cases, with the odds largely against the recovery of any case in which it occurs.

In still another district, perhaps not a score of miles distant from either of the former, still another complication of special significance occurs, with equal constancy, but with perhaps less prognostic fatality, in which the nerve centers are so impressed that aphasia and other manifestations of a similar character occur with marked regularity. These modifications, these differences, these varied complications, are undoubtedly the offspring of climatic influences, but just how much of a figure the malarial factor may play in the production of these phenomena, and to what extent their occurrence may be due to other and less demonstrable climatic conditions, is difficult of definite determination. The fact is

readily established, however, that malaria is the prevalent modifying influence in the class of cases cited. This can be done by the timely and judicious employment of our most reliable anti-malarial agent, quinine.

These facts are worthy of careful study and investigation. The study of climatology should engage the most earnest efforts of our schools and colleges throughout the country. A clearer understanding of the influences of climate in the production and modification of diseases would go far toward solving problems hitherto unexplained.

ALLEGATIONS OF HARSH TREATMENT OF THE INSANE.

During the last few years the reading public has been often shocked by reports of great cruelty and sometimes deaths from harsh treatment of the insane in public asylums for the care of that unfortunate class. One of the most recent of such reports has come from the Cook County Asylum for the pauper insane, in which an inmate named Burns is alleged to have died in consequence of the kicks and blows inflicted by two or three of the men employed as attendants. The post-mortem showed evidences of most extensive bruises, with fracture of one rib and the sternum. The primary judicial proceedings developed evidence that the Asylum is greatly overcrowded with patients and managed with a very inadequate number of attendants; many of whom, owing to the small wages paid and the repulsive nature of the work, are taken from the more rough and ignorant classes of society. While such conditions exist, it is unreasonable to expect that exhibitions of ill temper and inhuman violence will not often occur. No time should be lost in making such additional accommodations as will suitably provide for all the inmates; and no medical man should consent to take the superintendency of such an institution unless he is permitted to select and employ a sufficient number of intelligent and humane nurses or ward attendants to maintain order and reasonable discipline without exhibitions of ill-temper or the infliction of personal violence on the poor inmates.

EDITORIAL NOTES.

TIMES AND REGISTER.—We learn from *The Medical Register*, April 27, 1889, that a union has

been effected between *The Register*, *The Philadelphia Medical Times* and *The New York Dietetic Gazette*; and that on May 4th the united journals will appear under the title of *The Medical Times and Register*, with Dr. William F. Waugh, of *The Times*, as chief editor. Dr. John V. Shoemaker retires, on account of the pressure of other literary engagements, but the remaining writers hitherto engaged on the three, will continue their work for the combined journal.

OHIO STATE MEDICAL SOCIETY.—The forty-fourth annual meeting of this Society is to be held in Youngstown, Ohio, May 22d, 23d, and 24th, 1889. A full programme of work has been arranged, and railroads promised the usual reduction in fares, on the certificate plan. P. S. Connor, M.D., President, Geo. A. Collamore, M.D., Secretary, Toledo, Ohio.

THE STATE MEDICAL SOCIETY of Wisconsin will hold its next annual meeting in Milwaukee, commencing on the first Tuesday in June, 1889. For further information apply to J. T. Reeve, M.D., Appleton, Wis.

THE INDIANA STATE MEDICAL SOCIETY held its annual meeting in Indianapolis, May 1st and 2d, 1889. A good number of members were present. Dr. J. F. Hibberd, of Richmond, Indiana, as Chairman of a Committee, stated that there are 4,163 registered physicians in that State. Of this number 3,243 are regular physicians, of whom about 1,300 are members of the State Medical Society; 287 are classed as eclectic; 199 as homeopaths; 142 as physiomedical, and 192 unclassified. On the second day of the meeting the following were chosen as officers of the Society for the ensuing year: President, Dr. J. D. Hatch, of Lawrenceburg; Vice-President, Dr. S. T. Yount, of Lafayette; Secretary, Dr. E. S. Elder, of Indianapolis; Assistant Secretary, Dr. T. C. Kennedy, of Shelbyville; Treasurer, Dr. F. C. Ferguson, of Indianapolis; and Committee on Necrology, Dr. J. F. Hibberd, of Richmond.

THE NORTHAMPTON COUNTY (PA.) MEDICAL SOCIETY will hold its fortieth annual meeting in Easton, June 20, 1889, at which time a complimentary dinner is to be tendered to Dr. Traill Green, the founder of the Society, and one of the most meritorious members of the profession in the State.

SOCIETY PROCEEDINGS.

Medical and Chirurgical Faculty of Maryland.

Ninety-first Annual Session, held at the Hall of the Faculty, Baltimore, Md., April 23, 24 and 25, 1889.

DR. JOHN MORRIS, PRESIDENT, IN THE CHAIR.

DRS. G. L. TANEYHILL, ROBERT T. WILSON AND WILLIAM B. CANFIELD, SECRETARIES.

TUESDAY, APRIL 23—FIRST DAY.

THE PRESIDENT'S ADDRESS.

After greeting the members, he said that the Faculty was now celebrating its ninety-first birthday, and that he had watched its career for nearly a half century, and was the only surviving member who had entered its gates by examination. He then addressed the members on the following subject:

THE PHYSIOLOGY AND PATHOGENESIS OF CRIME.
HOW FAR CAN MEDICAL MEN AID IN ITS PREVENTION?

The teaching of the day appeared to be to make the physician a naturalist and a physicist. In studying these sciences the higher study should not be neglected—the study of society; the study of man, and his relations to his fellow-men, the advancement of the race through its physical cultivation. Millions of diseased men remain uncared for and the causes that have led to their degeneration are overlooked and unstudied. Physical culture is studied in the schools, but the character is not built up. We attempt to reform criminals, to rehabilitate them and ameliorate their condition. We should use prophylaxis. To prevent a man from becoming a criminal we must begin with him as a child. There is nothing practical in our moral and religious education. Even the sense of right and wrong is not clearly, effectively and practically taught. It is only the education that seeks to stimulate every noble purpose and capacity that can avail to form or change character, and this kind of education is not obtained in the school and the church. Every one cries out against immorality, but no steps are taken to create morality—to make morality a public sentiment; to make it a subject of national pride. Yet these are the prominent, the prevailing influences in Japan. There crimes of violence and outrage are scarcely known.

Where the law of heredity is recognized it is the duty of the medical man to forewarn parents, and to suggest the proper education and surroundings to render innocuous the taint of blood. This law of heredity obtains even more in moral than in physical traits, although the latter also, as we

know, can be transmitted. "Breeding back" would often render a happy change in our economy. "Begin with the man's grandfather if you wish to reform him." The family doctor has disappeared, but he must be brought back, to occupy a higher and a wider field. We are born with unalterable tendencies which are not always evil. The Jew and the Gypsy are examples of unalterable types. Psychology rarely enters into the education of a physician, and yet the questions of moral responsibility are associated with it. Ordinarily the physician treats the body alone, irrespective of the mental organization. He is but half a physician. The body yields to the mind, the mind to the body rarely. The weakness or total absence of certain powers of mind is rarely noted in children, and yet this observation is of the highest importance in shaping their future lives. The physician should be consulted in regard to the education of a family of children, and to do this he must have been trained by a long course of mental observation.

No man is born a criminal. We are not taught to value the truth. Perjury is the most common crime in our country, and yet it is rarely punished. The church and State have done little to regulate marriage, except the Roman Catholic church and the Church of England. Marriage should be regulated by law. Paupers and criminals should be prevented from marrying. The Legislature of Kentucky has a bill before it to regulate marriage. The tramp and malingeringer should be stamped out; they need not exist. It is as harmful to bring insane children into the world as it is to drive them insane by bad usage. The habitual criminal, man or woman, should be deprived of the power to procreate.

In all our original research, let us not forget these questions. Let it be directed to the foundations of life; to the evolution and structure of character; to the evolvment and building up a higher intellectual and moral constitution of the race; not to a childish search after pebbles and toys, of jackstraws in place of the true gold. In any and every event our work will go on—our profession will live as long as the ages endure. The more we advance in knowledge, the more the world will need us. As the astrologist, the alchemist, the barber of the Middle Ages, gave place to the pompous and pedantic oracle of the seventeenth and eighteenth centuries, with his latinity, his lancet and his squirt—the last like the spear of Telamon, which healed at one end the wound inflicted by the other; and as the oracle was followed by the man of the present time, with his ologies and marvelous nomenclature, his thousands of drugs, his hypodermic syringe and his microscope, seeking after the unseekable; so, in the future, this present man will be succeeded by a race of men of advanced thought, of truer convictions, of stronger culture, of higher and

broader views; to the end that the State may be enlightened and improved, humanity benefited, and religion exalted.

WEDNESDAY, APRIL 24—SECOND DAY.

DR. WM. OSLER, of Philadelphia, delivered the *Annual Oration*. (See page 649.)

Section on Surgery.

DR. RANDOLPH WINSLOW, CHAIRMAN.

The chairman called attention to the subject of SURGERY OF THE CENTRAL NERVOUS SYSTEM, and dwelt especially on the importance of understanding thoroughly the general and topical anatomy of the brain, and then referred to the important results obtained by experiments on animals, by clinical observations, post-mortem examinations, and by electrical stimulation of the exposed human brain during the performance of surgical operations. The cortex and base are most accessible and amenable to surgical procedures. Tumors of the brain are of more frequent occurrence than general practitioners think. W. Hale White and Victor Horsley have done the best work here. Cranio-cerebral topography is a new and very important study and has been mainly used in the surgical treatment of epilepsy, brain abscesses. The study of

SURGERY OF THE SPINAL CORD

is of more recent date. Few cases have been reported.

In the same Section DR. OSCAR J. COSKERY reported a case of

TREPHINING FOR CEREBRAL ABSCESS,

with the result of removing the pus and giving motion to a paralyzed arm and leg, but the patient subsequently died.

DR. JOHN C. JAY then reported

A CASE OF ENTIRE EXSECTION OF THE ULNA WITH RESECTION OF THE HUMERUS AND RADIUS,

in a woman 49 years old. Complete ankylosis did not occur and the elbow remains movable to the extent of several inches, and thumb and two fingers can be used. The operation was fully justified by the excellent results.

Section on Practice of Medicine.

DR. WILLIAM B. CANFIELD, CHAIRMAN.

DR. CANFIELD took up the following subjects:

I. THE RELATION OF DUSTY OCCUPATIONS TO PULMONARY PHTHISIS.

He began by saying that the pulmonary diseases caused by the different kinds of dust had received a variety of names according to the character of dust inhaled, but collectively they were all covered by the name "pneumonocomiasis."

Ever since Koch's discovery of the tubercle bacillus, and the gradually improved classification of lung diseases, there seemed to be doubt whether these dust diseases were tuberculous or not. The dust inhaled by miners in badly ventilated mines gradually overcame the action of the ciliated epithelium and penetrated to the alveoli of the lung, whence they found their way into the subepithelial layer, where, unless rendered harmless or devoured by the greedy phagocytes, they set up a *fibroid condition of the lung*. Most writers agree that the fibroid condition is a barrier to the growth and multiplication of the bacillus.

He then related the case of a miner who had a fibrosis of the lungs, and in whose sputa bacilli were always found at every examination, and yet the man improved and is now well. His conclusions were:

1. Patient had no previous history of, or predisposition to, tuberculosis.
2. He contracted a disease with which tuberculosis is supposed to be very rarely found.
3. He had tubercle bacilli in abundance in his sputa.
4. He is now entirely well.

II. THE PRESENT ASPECT OF THE QUESTION AS TO THE ETIOLOGY OF PNEUMONIA.

Pneumonia results from something more than "catching cold." Sailors lead an exposed life and rarely have it. A large number of investigators have been looking for the specific organism. Talamon did some excellent work. Friedländer's pneumococcus was accepted for a time, but the investigations of Fränkel and Weichselbaum have shown Friedländer's organism to be only an accidental accompaniment of pneumonia. Good work has been done by Gamaléia, Sternberg, Lipari and others. He referred to the theory of phagocytosis in connection with this subject, and related his own experience in the bacteriological study of the organism. He then took up

III. THE MORE RECENT TREATMENT OF PULMONARY PHTHISIS,

and spoke of the failure of Bergeon's method. Treatment has been carried out by:

1. Internal administration of drugs or medicines.
 2. Intrapulmonary injections.
 3. Inhalations.
 4. Climate. And cures occasionally occurred.
 5. Spontaneously.
1. The principal remedies recommended of late were creasote, tannin, calomel and morrhual. He had used creasote with some success.
2. Intrapulmonary injections had been discarded.
 3. Inhalations had no lasting influence on the lung tissue. Creasote, hydrofluoric acid and hot air had all been used. Weigert claims to get some good effects from the latter.
 4. Climate, in early cases well selected, is the

best treatment. Many observers, particularly foreigners, gauge the improvement or the reverse by the diminution or increase of bacilli found. This hardly seemed to be the proper test. Patients often do well when their sputum is laden with bacilli. Cures may result spontaneously, as Vibert has shown in his statistics gathered from the Paris morgue. In 131 persons between 20 and 55, all of whom died violent or sudden deaths, in 17, or 68 per cent., evidences of cured consumption were even found in the lungs. These facts should be borne in mind by those reporting cures from the use of new remedies.

DR. W. S. FORWOOD, Darlington, Md., said that the "flint disease," as it was called in Hartford County, was very common and very fatal with the workmen in the quarries. The men all have this disease, which begins very insidiously and grows worse. It ends like consumption, but the beginning is very different. In reply to Drs. Randolph Winslow and A. K. Bond he said that no one escaped the disease after working in the quarries, and all were permanently injured, even if they gave up the occupation in a year.

DR. J. T. WRIGHTSON, of Newark, N. J., said that lung disease was very common among the hat-makers of his city, but he attributed it not so much to the dust as to drinking.

THURSDAY, APRIL 25—THIRD DAY.

Section on Obstetrics and Gynecology.

DR. T. A. ASHBY, CHAIRMAN.

The chairman remarked first on the growing tendency to abandon empirical methods and to employ more rational views of pathology and treatment. The study of abdominal surgery claims attention. Exploratory laparotomy is the only correct means to use in some cases. Laparotomy for pelvic abscess is a subject gradually gaining upon the professional mind. Primary laparotomy in tubal pregnancy has been brought into conspicuous prominence; but the greatest interest has been aroused in the use of

ELECTRICITY IN GYNECOLOGY.

He then discussed the various diseases for which electricity had been used, and then showed how much had been accomplished by it in a short time.

DR. L. E. NEALE then exhibited

A NEW OBSTETRICAL FORCEPS

which was a modification of Howard's modification of Tarnier's. He called it "Neale's Forceps." He claims superiority on the ground that it is all hard metal, and can be made thoroughly aseptic, has Simpson lock, blades are narrow, preventing rupture of perineum. It is made by Williams, of Baltimore.

DR. P. C. WILLIAMS praised it very highly.

He liked Tarnier's handles. In using it as ordinary forceps, he thought there was not force enough at the handle to manage it. It had many advantages which made it a superior instrument to the others.

Section on Materia Medica and Chemistry.

DR. T. BARTON BRUNE, CHAIRMAN, read a paper on

SUGAR TESTING, WITH SPECIAL REFERENCE TO
"ALCAPTONURIA,"

in which he reviewed the various substances giving a sugar reaction, and the danger of trusting too much to one test alone.

DR. W. B. PLATT took up the subject of

SURGICAL THERAPEUTICS,

in which he considered all curative non-mechanical agencies employed in surgical cases, whether after accident, operation, or for surgical diseases. These he classified as anæsthetics, antisyphilitics and antiseptics. In the first class he discussed protoxide of nitrogen, chloride of methyl and cocaine. Under antisyphilitics were mentioned mercury inunction, hypodermic injections and gray oil. The antiseptics were carbolic acid, creolin and iodoform.

DR. WHITFIELD WINSEY then read a paper on

HYPNOTICS AND ANTIPYRETICS.

In the former class he reviewed what is now known of sulfonal, and drew the following conclusions:

1. It is a true hypnotic.
2. It is easy of administration, being without taste or odor.
3. It is safe, prompt and efficient, with objectionable after-effects.
4. No sulfonal habit contracted.

Under antipyretics he went over very thoroughly the literature of antipyrin, antifebrin and phenacetin.

DR. H. SALZER read a very exhaustive paper on

LAVAGE,

and gave the indications for its use in adults and children, and his experience with it.

In the discussion which followed, the remarks were confined to glycosuria and the sugar tests.

DR. A. K. BOND thought the testing for sugar was not so simple a method as it appeared. He thought the phenylhydrazin chloride test was the most satisfactory, but agreed with Dr. Brune that no one test should be used alone.

DR. GEORGE J. PRESTON thought it was important to know whether the amount of sugar increased or decreased.

DR. WILLIAM B. CANFIELD thought no test was reliable. He had succeeded with other tests where the phenylhydrazin chloride test had failed. He thought the use of the microscope was an ob-

jection to this test, as probably two-thirds of the medical graduates of the United States did not know how to use a microscope.

DR. J. C. HEMMETER was surprised that the saccharinmeter had not been mentioned. Salkowsky and Leube proved that it showed the presence of $\frac{1}{10}$ of 1 per cent.

DR. T. B. BRUNÉ, in closing, said he regretted to bring such a long discussion before the Society. The phenylhydrazin chloride test had not been long enough before the medical public to judge of it yet. Some other substance, as carbohydrater, may reduce these crystals.

Section on Sanitary Science.

DR. W. C. VAN BIBBER read a report on the subject of

QUARANTINE,

in which he discussed the Maryland Health and quarantine establishment, and referred particularly to yellow fever.

FRIDAY, APRIL 26—FOURTH DAY.

DR. F. T. MILES read a paper entitled: *A Case of Dilatation of the Stomach Dependent upon Contraction of the Pylorus* in which tetany of a typical character occurred, speedily ending in death. He could find nothing in the vomited matter to account for it.

DR. J. W. CHAMBERS submitted a paper on *Cystic Tumor of the Lower Jaw*.

DR. GEO. J. PRESTON reported a case of *Tumor of the Cerebellum* pressing on the middle lobe.

DR. J. D. BLAKE, in referring to Dr. Welch's paper, asked how the poison could be transmitted by the nerves alone? If injection into the blood does not kill, but makes the animal proof against future attacks, why not inject the substance directly into the blood of man to prevent hydrophobia?

DR. W. C. VAN BIBBER said if the temperature stated would kill the organism of rabies, this should give a valuable idea on the treatment.

DR. WM. H. WELCH remarked in conclusion that many facts about rabies were known which could not be explained. It was not understood how the virus was transmitted along the nerves, but the fact remains; and still further, this did not seem to disturb the function of the nerve. It might extend along the lymph vessels of the nerves; we know little of the composition of the lymph. He did not mean to be understood as saying that the virus did not extend through the blood lymphatics, but that we have no evidence of this. In reply to Dr. Van Bibber, he said that the method of cauterization is a good one, but it does not prevent rabies. The virus must penetrate into the nerve to be transmitted by it, and the chance of piercing a nerve in the skin by puncture is very small.

Section on Psychology and Medical Jurisprudence.

DR. RICHARD GUNDRY, CHAIRMAN.

THE CHAIRMAN read a paper on the RELATION OF THE PHYSICIAN TO THE INSANE, in which he spoke particularly of the frequency of monomania, and of the difficulties of recognizing true insanity by the unskilled, as a person may be entirely sane on many subjects and insane only on a few. A person totally insane has no recollection of a deed committed, while a person partly insane may remember the past partly.

SATURDAY, APRIL 27—FIFTH DAY.

Section on Microscopy, Micro-Chemistry and Spectral Analysis.

DR. CHRISTOPHER JOHNSTON, SR., CHAIRMAN.

THE CHAIRMAN read a report on: I. *The Application of Spectroscopy to the Study of the Blood*. II. *The American Objective as Compared with the German*.

Section on Ophthalmology, Otology and Laryngology.

DR. H. A. MCSHERRY read a paper on *Curability of Laryngeal Phthisis*; and DR. A. FRIEDENWALD one on *Distorted Equilibrium of the Muscles of the Eye in the Causation of Nervous Diseases*.

Volunteer papers were then read by DR. S. J. FORT on *Aphasia, due to Shock of Severe Consecutive Epileptic Spasms*; by DR. JOHN C. HEMMETER on *Recent Investigations on the Physiological Activity of Alcohol*, which was the result of three years' carefully conducted work in the Biological Laboratory of Johns Hopkins University; by DR. A. K. BOND on *Aneurism of the Abdominal Aorta Bursting into the Pleural Cavity*; and one by DR. GEORGE H. ROHÉ on *A Painless and Efficient Method of Extirpating Vascular and Pigmented Nævi*, with exhibition of photographs.

The following were elected for 1889-90:

President—Dr. A. Friedenwald.

Vice-Presidents—Drs. T. A. Ashby and Chas. G. W. Margill.

Recording Secretary—Dr. G. Lane Taneyhill.

Assistant Secretary—Dr. Robert T. Wilson.

Corresponding Secretary—Dr. Joseph T. Smith.

Reporting Secretary—Dr. Wm. B. Canfield.

Treasurer—Dr. W. F. A. Kemp.

Gynæcological Society of Boston.

200th Regular Meeting, March 14, 1889.

THE PRESIDENT, W. SYMINGTON BROWN, M.D.,
IN THE CHAIR.

PATHOLOGICAL SPECIMENS.

DR. F. L. BURT exhibited a *fibroid of the uterus* which he had removed from an unmarried woman about 30 years old. It filled the vagina

and was attached by a small pedicle near the internal os uteri. The tumor, the size of an orange, was removed with considerable difficulty from its attachment, and when free it could be removed from the vagina only by the aid of the fingers in the rectum. The hæmorrhage, which had been considerable, gave no more trouble.

An interesting paper was read by AUGUSTUS P. CLARKE, M.D., entitled

FARADISM IN THE PRACTICE OF GYNÆCOLOGY.

In these days of brilliant theories and magnificent possibilities, he said, much is claimed in regard to the value of the galvanic current in the treatment of certain diseases of women. Results far in advance of anything that a generation ago the most enthusiastic advocates had even hoped for, have been achieved by Apostoli and his followers. The elaboration of this system of electro-therapeutics has been accomplished only by the expenditure of a vast deal of money and thought. Instruments and appliances the most ingenious, have been devised to meet the various phases and indications of what may be termed a normal departure, suggesting the adoption of remedial measures. The work in this field has many attractions, and is capable of satisfying the longings of natures the most ambitious, and of yielding a feeling of complacency, that can only be rivaled or reached by the eclat, that is sure to follow successful cases of laparotomy and ovariectomy. Indeed, the definition of the term electricity or electro-therapeutics of late in some quarters has become almost identical with galvanism. The display by the development of such special appliances are led to further inquiries in regard to the treatment of cases of a gynæcological class by the application of the faradic current. It is to be noted that the results obtained by the employment of this form of electricity have been most gratifying and give promise of the attainment of results which, without the employment of this current, could not be secured. Apostoli's method of treatment of chronic metritis and endometritis comprises an intrauterine chemical galvano-cauterization to be carried out in a strictly antiseptic manner. The sittings, though short, must be frequent if they are to be successful. The application of this method necessitates the use of special rooms and conveniences, which only a few among the larger operators are likely to have. Any departure from the prescribed plan is almost certain to be attended with much danger. When we consider the necessity of repeating frequently the sittings before we can even hope for success, we are forced to conclude that this plan of treatment will never become very popular. Operators, who have special conveniences and who have reason to hope for successful issue of the cases, will always prefer treatment by laparotomy or other surgical methods in which

the lives of patients in most instances are to be jeopardized but once, than repeatedly to incur risks by the method of chemical galvano-cauterization. In the employment of the faradic current we act upon the superficial blood-vessels, we modify the nutrition of the parts, we hasten absorption of extraneous matter. All this can be done without incurring that extreme hazard which usually accompanies methods by galvanization.

The faradic current has a markedly sedative effect upon the parts, and when judiciously and intelligently applied the patient often feels a sense of relief, and will return for further help. Even in cases in which marked inflammatory processes are present, the faradic current may be resorted to with much benefit. In a paper presented to the Association of Obstetricians and Gynæcologists, Washington, D. C., September, 1888, I reported several cases of salpingitis, in which the treatment supplemented by faradization was productive of much benefit. Cases in which the abdominal walls were soft and unusually relaxed from want of tone, or in which there was undue distention induced by various lesions were greatly relieved by the employment of the faradic current. The following cases are appended to show the more favorable results of the treatment.

Case 1.—Mrs. K., æt. 38 years, mother of one child, 13 years old, notified me July, 1888, that she expected to be confined in September following. I saw the patient July 21, and made careful examination, and found that she was not pregnant. Her menses had appeared at irregular intervals, but the distension of the abdomen was so great that she supposed herself pregnant, and had made elaborate preparation for confinement. The bowels were regular, she had fair appetite, and the urine appeared normal. There was some pain and tenderness over each ovary. The circumference of the abdomen was greater than normal and the patient fancied she felt foetal movement. The uterus was soft and relaxed and was anteverted, but not to such degree as to cause vesical disturbance. I began with the use of the faradic current with slow interruptions over the abdomen and the cervix, while over the ovaries on the outside frequent interruptions of the current were employed. Occasionally an intra-uterine electrode was employed while the other pole (usually the negative) was connected with the wire brush. The patient quickly improved under this method of treatment. Abdominal distension subsided, and the pain and discomfort in the ovaries disappeared. The sittings were continued at intervals of three days, and each occupied from five to ten minutes, and covered a period from August 14, to November 17, 1888, since which date she has been in good health.

Case 2.—Mrs. O., mother of three children, the

oldest 12 years, the youngest 4 years. This patient had been an invalid for several years. There had been an old perineal laceration though no prolapse nor any vesical disturbance. The cervix was thickened and indurated. There was no leucorrhœal discharge nor any history of an acute inflammatory process. The patient had worn several kinds of pessaries, but said that she had never experienced any special benefit from their use. The principal trouble complained of when she came under my care, was pain in the back and left ovarian region, and at irregular intervals attacks of severe pain in the head, attended with symptoms which showed that hysteria was an important element in the disease. As this patient had been under the usual routine of several able practitioners, I advised discontinuance of the use of all supporters and other means of treatment heretofore received, and began with employment of the faradic current. The treatment was commenced in the early part of August and was continued at intervals of three and four times a week, each application of the current lasting eight minutes. Over the more painful points the current with frequent interruptions was used. Along the muscles of the back and areas of great sensitiveness the current with slower interruption was selected. The negative pole with an intra-uterine electrode was applied. After the third application of the current the patient showed signs of improvement. The treatment was persevered in regularly for two months. After that the sésances were continued at longer intervals. The treatment was supplemented with an aloëtic purge and followed by the daily use of gentle aperients. The patient, though not fully restored to health, so far recovered as to be able to attend to her domestic affairs, and to go out and enjoy many of the comforts and pleasures of life. It is highly probable that eventually an operation for the restoration of the perineum will have to be undertaken.

Case 3.—Mrs. S., æt. 26 years, married five years, miscarried after the third month of pregnancy. The placenta was retained upwards of sixty days. When I was called there was flowing and a foetid discharge. I succeeded in effecting an entire removal of the placenta. The patient after that rapidly improved, but was anæmic, and the tissues were soft and relaxed. After four months the patient returned to me complaining of vesical disturbances. Vaginal examination showed that the uterus was retroflexed, and that there was a well defined cystocele. The uterus was restored and the patient was directed to urinate at short intervals, and to avoid if possible the occurrence of over-distension of the bladder. After the lapse of six months, there being still considerable vesical disturbance, faradization was begun. Slow interruptions of the current were employed in the cul-de-sac on

each side and over the abdomen. The sésances were made every third day for four weeks and then at intervals of once a week. After the second month the patient considered herself to be cured. Recent examination showed that, though the patient had received no treatment for nearly six months, the cystocele had not returned, and the retroflexion was of no consequence. The patient is now strong and in good health.

Case 4.—Mrs. R., aged 38 years, mother of two children, the youngest of whom was 15 years. After the last confinement she suffered very much from catarrhal endocervicitis, but the menses have appeared regularly. Vaginal examination showed that there had been a multiple laceration of the cervix, but the cicatrization was fully established. The cervical canal was preternaturally sensitive. The perineum had been lacerated, but nature had partially restored the rent. The uterus was retroverted. The principal trouble complained of when the patient came under my care eight months ago was pain in the ovaries. These could be distinctly felt and were not displaced. There was pain also in the back, from the lower dorsal vertebræ to the coccyx. The tendon reflex was markedly increased. The patient suffered from frequent attacks of "blinding headache." The urine was heavily loaded with urates. Under ether I curetted thoroughly the cervical canal. The uterus, after being restored, was kept in place by vaginal tampons. Butcher's meat was interdicted, and the bowels were kept open by gentle aperients. The patient improved under the treatment. After the lapse of three months slow interruptions of the faradic current were tried every third day for five weeks, and for the next four weeks once in every four days. Subsequently once in two weeks. The treatment by faradization occupied upwards of four months, and its good effect was shown by the disappearance of the increased tendon reflex and the return of strength and appetite. All pain and tenderness vanished, and the local lesions now give no trouble whatever.

Case 5.—Mrs. S., aged 38 years, mother of one child 4 years old. The patient recovered well from confinement and was in good health until January, 1888, when she sustained injuries from being thrown from a carriage. She suffered much at the time, was confined to bed. There was severe pain in lower part of back and in the bladder. She suffered more or less in micturition. There was no uterine displacement, but a sharp pain and soreness in the right ovary was complained of. After two months of rest and treatment the pain and soreness disappeared, except that in the ovary. The ovary of that side must have been affected by the shock and concussion sustained. In March following, faradism was tried. The positive pole was applied over the abdomen, and more particularly in the right in-

guinal region and in the right cul-de-sac. The other pole was applied along the lumbar and sacral portions of the spine. The wire brush on the outside was also used. The patient showed improvement after the third séance. The sittings were continued at intervals of two and three days until April 15th. Since then no further trouble has been experienced from the ovaritis, and the parts have resumed their normal functions.

Case 6.—Mrs. A., æt. 41 years, mother of three children, the youngest of whom was 9 years old. For the past five years the patient had had several attacks of rheumatism, necessitating at the time of each attack confinement to bed. When I was called she was recovering from one of these attacks which had continued from Sept. 10th to Oct. 24th. There was swelling of both knees and ankle joints, but the greatest amount of suffering appeared to be centered in the pelvic organs, especially in the uterus and its adnexa. Mineral waters and saline laxatives were employed. The use of meats and nitrogenous food was discontinued, and milk and light articles of diet were prescribed. The patient rapidly improved under the change of treatment and on Nov. 1st was free from the rheumatic affection, except weakness and discomfort in the back and genito-urinary organs. The patient was unable to walk without the aid of a cane or crutches. There was uterine dyskinesia, though no marked flexion of that organ could be made out. There was a sensible diminution of the tendon reflex and almost an entire absence of the ankle clonus. At this time treatment by faradization was begun, and continued until Dec. 12th, when the pain was overcome and the patient able to walk without artificial help. The reflexes have returned to their normal condition. The current with slow interruption was applied every second day.

Case 7.—Mrs. L., æt. 22 years, while walking on a country road during the evening of Jan. 15, 1888, sustained a fall over an embankment. At the time of the accident uterine hæmorrhage occurred. The patient is said to have complained bitterly of pain in the right hip and back. She was under treatment for six weeks, at the end of which time she had so far recovered as to be able to return to her home. The patient came under my care on the 10th of the following May. Vaginal examination showed that there was a marked antelexion. There was vesical disturbance and considerable difficulty experienced in walking or in attempting to make any considerable exertion. A Hodge pessary gave only partial relief, but was worn until August 3d, when I removed it permanently, and began with faradic current with slow interruptions. Each séance lasted ten minutes and was repeated every third and fourth day. After the sixth application the uterine tissue appeared firmer and the organ itself on being restored retained its position much

longer than before. The treatment was persevered in until October 8th, when the patient regarded herself as well as usual. Vaginal examination showed that the uterine flexion existed in a minor degree only.

In reviewing the histories and symptoms of these cases we find inflammation attended with more or less pain, and some form of neurosis was a prominent feature, and that the application of the faradic current was productive of much benefit. In Case 1, the current with slow interruptions had the effect of stimulating the relaxed muscular tissues, and of giving tone and vigor to the parts. In Case 2, the pain and reflex symptoms were relieved, and the strength and health improved, and should an operation for the restoration of the perineum be deemed advisable, the patient will be in much better condition to insure recovery. Case 3 shows the beneficial effects of the current with slow interruptions. A cystocele induced by overdistension of the bladder in a subject of weakened and relaxed muscular tissue was at length fully overcome by prolonged application of the current. Case 4 shows also benefit derived from the same current in controlling the tendon reflex and nervous excitability. Case 5 illustrates the therapeutical advantage of faradism when the wire brush is used. In the treatment of inflammation supervening shock and concussion of the ovary. Case 6 further shows the help to be derived from continued application of the faradic current in restoring reflexes to the normal condition and in exciting healthy action in the genito-urinary organs. The last case in some respects, like Case 3, exemplifies the tonic effect that may be obtained by the employment of the same current on relaxed uterine tissues.

I am in possession of notes and records of some thirty other gynecological cases in which faradization was resorted to with favorable results. In twelve of these the application was made to overcome pain and nervous disturbance arising from various lesions requiring operative interference, viz.: six for pyo-salpinx and salpingitis, four for lacerations of the perineum and of the cervix, one for uterine polypus and one for urethral vascular growths; and in nine to overcome pain and nervous phenomena due to functional disturbance, viz.: three for subinvolution, four for leucorrhœal and gonorrhœal pain, one for neuralgia of the ovary, and one menorrhagia. In two the application was made on account of amenorrhœa, in four for cystitis, and in three for hysteria and loss of power in arm and leg. These cases I report not with the view of establishing a claim for originality in treatment or for the purpose of setting aside other well-tried and settled methods, but in recognition of the fact that we have in this form of electricity for properly selected cases, after other means have failed, an agent capable of yielding most gratifying results.

DR. W. G. WHEELER said that he was glad to see a return to faradization. A good degree of success had been attained by Dr. Cutter by his method of treatment. He had in one case used Cutter's battery in treating a large tumor reaching above the umbilicus. The shock produced is profound, and it is necessary to etherize the patient. One needle was introduced through the rectum and the other through the abdominal wall. The current passed for seven minutes. An abscess was produced, which discharged for several months. The operation was performed a year and a half ago, and the tumor is now quite small and the sinus is closed.

DR. A. L. NORRIS has found better results from the use of the interrupted current. For the last eleven years he has used a battery made by Kidder, of New York, on a large number of cases with success. He has had good results in the treatment of amenorrhœa by faradization. For this, one pole is usually placed on the nape of the neck and the wire brush is applied over the loins, but sometimes he uses an intrauterine electrode.

DR. G. W. JONES: I think that Dr. Clarke should be complimented on the good results he has obtained from faradization. If we could all get such results we would be highly gratified, and not without reason; for the remedy is at once so simple and easy of application. For my part, however, I have not been able to obtain such encouragement. I have been using faradism for more than sixteen years in just such cases as Dr. Clarke has spoken of and, although I have sometimes thought improvement resulted, there was not such a decided benefit as to make me feel hopeful of very brilliant success. I say this of the faradic current when used exclusively. I have no doubt but that a judicious use of the faradic current may be of some benefit in many cases of leucorrhœa and simple metritis and ovaritis and neuralgia of the uterus and ovaries. Also in some cases of hysteria due to pain in the locality of the generative organs, it might have a moral if not a physical influence; but when the various disturbances of the female reproductive system are due to morbid tissue changes in those organs, I believe that faradism will have little if any influence on those morbid conditions. In such cases galvanism is going to do the most valuable service. We do not want to stimulate cell-growth, but rather retard or destroy such cell proliferation, and in the galvanic current we have an agent that will do that in the best manner, if it is used in a careful way. For all ordinary purposes, an apparatus consisting of 24 to 36 cells of McIntosh or Wait & Bartlett make will be sufficient to do the work of a general practitioner.

One of the greatest drawbacks to the use of galvanism to my mind, is the high cost of a good galvanometer to measure the current used. A

reliable instrument costs so much that few general practitioners are willing to afford the outlay when they so seldom use it, and I believe if we are to use an agent so potent for good or evil, that the dose administered should be as accurately measured as strichnine or morphine. If we expect so get exact results from our practice, we ought to know exactly how those results are obtained in order to have them of practical value.

DR. F. L. BURT: There seems to be no doubt that all are not equally successful in their results from the use of electricity. The enthusiast, who thinks it the only agent of good, is no doubt over sanguine and probably reports too favorably. He who decries it, on the other hand, has doubtless not taken the trouble to investigate properly. I am not so enthusiastic as to use this agent to the utter exclusion and denial of everything else, but I do know that it is of value and I have frequently been gratified at my results. Failure is very frequently due to a lack of knowledge in the application on the part of the physician, and a very frequent cause of failure is due to the use of poor batteries. A good battery is a necessity. Many of those on the market are good toys, but are almost useless in the treatment of gynecological cases. Two coils, coarse and fine wire, with a slow and a rapid vibrator, are necessary. I have used the faradic current with much satisfaction as an external application for its soothing effects, to ease pain, to stimulate muscles to contract, to test reactions in certain nervous affections, to increase peristaltic action, etc. In gynecological cases it has been of great service in some cases of amenorrhœa, to cause more regular menstruation, to ease menstrual pains and to relieve general pelvic pain. In cases of relaxed tissues or prolapse of the pelvic organs, there is a slow but beneficial result. The method of application and kind of electrode used to have much to do with the success in any given case. The reader has said very little about the method of application, but although it is quite important perhaps the profession is sufficiently informed in respect to it.

In the early part of his paper the reader gave me the impression that he laid a great stress on faradism and little if any on galvanism. Faradism has been used more commonly in the past, and I think with better results, but this could only have been because there was less knowledge of the use of galvanism. This is not so to-day. Without speaking at all disparagingly of either variety, I think that no one, who has thoroughly tried both kinds, will hesitate for a moment to give the preference to galvanism as the most generally useful electrical current. There is no longer doubt of its value in treating fibroid tumors. In some cases the results are excellent, yet it is equally true that there are cases which cannot be benefited by its use, and surgery must

come in for a certain number of cases. The symptoms are usually relieved or cured, discharges are lessened or entirely stopped and hemorrhage is checked. Galvanism will stop hemorrhage which is due to the presence of a fibroid or other intra-uterine causes, but is of no use when due to pelvic troubles external to the uterus. There is a class of cases of fibroid associated with diseased tubes or displaced and adherent ovaries, which is not benefited by electricity. These need surgery. I reported a typical case of this kind in the *Boston Medical and Surgical Journal* of January 24, 1889. Inflammatory pelvic deposits are absorbed by the use of galvanism. On the other hand, a point of considerable importance which I have mentioned before, the cases, diagnosed as pelvic cellulitis and which are frequently pyo-salpinx, are treated by galvanism and not benefited. This is due, according to my experience, to the fact of the presence of pus. In other words, pyo-salpinx or pelvic abscess is not relieved by galvanism, and this fact may aid in the diagnosis of the case. I have reported a typical case of each kind, for which see same reference as above. In the treatment of the disorders of menstruation and of diseases of the endometrium, I have thus far had decidedly beneficial results. Some cases in which there is more or less constant pain in the region of the ovaries in which the diagnosis varies, have been cured by the use of galvanism. There are also many conditions in which galvanism is useful, which I will not take your time to speak about, and still others which I am as yet investigating and hope to make a report in the future. Electricity, galvanism especially, should not be used by persons who are ignorant of it as a therapeutic agent, and the physician who is to employ it should be well versed in respect to its actions, and should know thoroughly the construction of the machine which he is about to employ.

DR. W. S. BROWN said that the cases detailed by the reader were very interesting, and of practical value. He believed that the primary faradic current exerted a remarkably soothing influence on excitable patients, under which they sometimes fell asleep during its administration. As he had several times related to this society, he was present when Dr. E. Cutter (now of New York) made his first attempt at electrolysis in Melrose, Mass. Dr. Kimball, of Lowell, also assisted, but, on account of the needles used being too slim, we did not succeed in penetrating the fibroid tumor. He was still in doubt whether the success in subsequent operations was due to electrolysis or to shock. Like all similar operations, it is not free from danger; and, in many respects, differs from Apostoli's.

DR. A. P. CLARKE: In closing the discussion the speaker said that he should offer only a few remarks. In the first place he would state that

he did not wish to be understood as holding to the view that the faradic can be substituted for the galvanic current. It is true, he said, that he had referred to the achievements of Apostoli and his followers, but that treatment comprises chemical galvano-cauterization. In order to insure success when adopting Apostoli's method, instruments of peculiar construction must be employed, and their application must always be made under the strictest antiseptic precautions. For this reason he believed that method of treating certain morbid lesions would never be popular, but other methods would be resorted to to accomplish the same results. The cases that are benefited by faradism are often radically different from those that may be benefited by galvanism, the former can be treated with comfort and safety to the patient and with satisfaction to the physician. The report of the 37 cases as given in his paper, as well as of those that he had already published, the speaker remarked, attest in some measure the benefits that may be secured by faradism. Something has been said in regard to the employment of the faradic and the galvanic current in the same case; the moral effect of such treatment may occasionally be of benefit, but the nature of lesions requiring the use of the galvanic and faradic current often being so different, he very much doubted whether, in the majority of cases, any permanent improvement resulted by their admixture. The speaker made mention of the helpful effects of the faradic current with slow interruptions in cases of weakened and relaxed muscular tissue; he referred particularly to Case No. 3 in the paper, in which a cystocele induced by overdistension of the bladder was cured by prolonged applications of that current. For overcoming pain and nervous excitability, the faradic current with frequent interruption was employed. He also referred to the results mentioned in the discussion by Dr. Burt, that were obtained by a fine and by a coarse coil of wire in his battery. The distinguishing features of these respective currents are important considerations. By keeping this principle in view the operator will often be successful with his cases; by neglect, however, utter failure may result. Reference has been made to Dr. E. Cutter's method of electrolysis, though a consideration of that method of operating is hardly germane to the subject now before the Society, the speaker would venture to remark that he had been favored with an opportunity of seeing some of the earlier cases of fibroids treated by that distinguished operator. He believed that Dr. Cutter should have the honor of being the originator of the treatment of uterine fibroids by electrolysis, and that he is deserving of great credit for the good work he so early accomplished.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York Academy of Medicine—Dr. E. F. Brush read a Paper on the Relationship Existing between Human and Bovine Tuberculosis—Discussed by Dr. H. M. Biggs, Dr. Forrest, Dr. Grandin and Dr. Loomis—Signs of the Moribund Condition, by Dr. John Shradz, etc.

At a recent meeting of the Academy of Medicine Dr. E. F. Brush, who for some time past has been making a special study of this subject, read a paper on *The Relationship Existing between Human and Bovine Tuberculosis*, in which he advocated the doctrine that tuberculosis in man is derived directly from the bovine species, and claimed that if domestic cattle could be done away with, tuberculosis would in the course of a few years become extinct, since while it has been conclusively demonstrated that the disease can be transmitted by the cow to her offspring, there is no proof that such transmission ever takes place in the human subject.

Phthisis, he said, was not, as many supposed, the result of civilization, since barbarous and uncivilized races were afflicted by it as severely as many of the most advanced civilized peoples. Neither geographical position or climatic conditions were a factor in its distribution, although every part of the globe, with the exception of a few isolated areas, was a habitat of the disease. After several years of close study of the affection, including a consideration of all available statistics and the habits of the people where it prevails, he said he had arrived at the conclusion that the only constantly associated factor is found in the inbred bovine species. If a community was closely associated with inbred dairy cattle, tuberculosis prevailed there, and this position he believed susceptible of proof.

After referring successively to statistics relating to phthisis among the Hottentots of Africa and the Kirghises of the steppes of Russia, and in Denmark, Iceland, the island of St. Michael in the Atlantic Ocean, Greenland, South America, Australia, New Zealand, the Highlands of Scotland, North Wales, the Hebrides, Switzerland, Madagascar, Algiers and Greece, he stated that in studying the relations, as regards tuberculosis, between the human and bovine races, religion was found to play a considerable part. Thus, in India, with the Mohammedan, Brahmin and Buddhist religions, there was undoubtedly an absence of phthisis before the English occupation. Up to that time the only cow the inhabitants had was the small Hindu variety, not related to our dairy cow, and it was regarded as an object of veneration; while the milk used in the country was de-

rived from the buffalo. All the Buddhists and many of the Brahmin castes abstained from the use of meat in any form. There was, however, a constant change taking place in a country like India. Prejudices were gradually dying out, and many of the people had undoubtedly adopted the habits of their conquerors. The English dairy cow was slowly but surely finding her way into India; though the Buddhists and Brahmins would, of course, be the last to accept the cow as a food producer.

In considering the statistics of Europe he said it would be found that the prevalence of phthisis is regulated by the ratio of the bovine to the human race. Thus, in Ireland, where the cattle about equaled the human population in number, and in Denmark, with about the same ratio of cattle to inhabitants, the disease was about equally prevalent. In Portugal, where there are six inhabitants to one bovine animal, phthisis attracted so little attention that but few notices relating to the disease in that country could be found. Comparative immunity from the disease, corresponding with the small number of cattle, was also met with in many parts of Italy and Egypt. From the statistics that he produced Dr. Brush thought there could be little doubt that the inbred species of the bovine race is the prime etiological factor of tuberculosis in the human race. They not only fostered the germ and prevented its extinction, but sowed it in the human race, continually and abundantly. Without their aid the germ would perish, for of all germs known, none had so hard a struggle for existence in man as the bacillus of tubercle; as was shown by the fact that out of the immense number of individuals who were exposed to its infection, so comparatively few contracted the disease. After diligent search he had failed to find a single well authenticated case on record of a human foetus at term showing evidence of tuberculosis; and the cow was the only known animal that thus transmitted tuberculosis to her offspring.

In concluding his paper Dr. Brush said: Man cannot generate new forms, but he can so control and interfere with nature's processes as to modify the original design. Inbred cattle are selected, sheltered and pampered, so that they would be unable to withstand the rigorous conditions of the wild state. They propagate earlier, are larger milkers, and are more efficient beef-producers, while their meat is more delicate and tender than that of the wild animal. All this is achieved by man at the expense of his own health.

In the discussion of the paper Dr. H. M. Biggs, of the Carnegie Laboratory, said that he could not but dissent very strongly from the conclusions reached by Dr. Brush. It was well known how unreliable statistics were. He believed that the statistics given in the paper were not strictly true; but even if they were true, he did not think they would prove the correctness of Dr. Brush's posi-

tion, for the reason that they left out of consideration all the other factors concerned in the production of tuberculosis. Having criticised some of the statements made in the paper in regard to the prevalence of phthisis in some of the countries and places mentioned, he stated that in Chili the disease had of late years become very common, although there had been no marked increase in the number of inbred cattle to account for this. Again, in the Sandwich Islands the population was dying off from phthisis; but this was not because of the presence of inbred cattle, but was due to the spread of the infection by white settlers. The same was true of the American Indians. They did not possess many inbred cattle; yet phthisis was very fatal among them.

Dr. Brush, he said, had left entirely out of account the influence of age, altitude and occupation, which had been shown to be very important etiological factors. If tuberculosis was often conveyed by means of milk the disease ought to be much more common among young children, who lived almost entirely upon this food, than among any other class of individuals; while as a matter of fact it was quite rare among this class. The facts appeared to show that phthisis is most prevalent among the highly civilized nations and among the native populations of uncivilized countries, which are brought into more or less constant contact with foreigners from civilized countries. It seemed to him that Dr. Brush had started out with the preconceived idea that phthisis is derived from the bovine species, and had endeavored to make all the facts he met with in connection with the disease subservient to this preconceived notion. The only observations which carried out this idea were based on statistics which, as he had said, he believed to be unreliable, and which would only be of value if they were collected with the greatest possible care, and with all the other conditions affecting the production of phthisis also taken into consideration.

In all civilized countries there are to be met with these other elements (and particularly that of occupation), which enter into the causation of the disease. Confinement in close, ill-ventilated apartments had a most pronounced effect upon males and females alike. More than this, the theory propounded in the paper was entirely inadequate to account for the marked prevalence of phthisis among armies and the inmates of prisons. Again, other things being equal, the disease was found to prevail in proportion to the density of the population.

We could not but regard Dr. Brush's conclusions as unfortunate, especially if they should be accepted, since they would have the effect of diverting attention from the most important mode of origin of phthisis, viz: transmission from the human subject. If the disease were derived from

animals it could only be through the avenue of the alimentary canal; and it was a well-established fact that the number of cases in which the infection enters the system through the alimentary canal is exceedingly small. In the case of animals fed on tuberculous matter the resulting tuberculous disease, when such occurred, was found to be located in the alimentary canal, not the lungs; and there was every reason to believe that the same would be true in the case of the human subject. In tuberculous animals, moreover, the milk was not infected with the bacillus unless the mammary glands are implicated in the tuberculous disease.

It seemed to him ill-advised to look for the cause of the trouble in this unlikely source (from animals), when there were so many ready ways by which the human system might become infected with tuberculosis. One of the most prominent of these was undoubtedly the sputum of tuberculous patients. The sputa of all such individuals abounded in tubercle bacilli, and when it was remembered how large was the quantity of the expectoration of consumptives and for how long a time the disease often lasted, it could well be appreciated what a source of danger to others this constituted. The sputum was apt to be scattered all around, and on its becoming dry the bacilli it contained often floated about with the dust in the air. The bacillus was the universally recognized special cause of tuberculosis, and it might thus be seen how readily it could be inhaled in this way, and so brought into direct contact with the lungs, which are the ordinary seat of the disease. Although he felt convinced that a much larger number of cases of phthisis really originated from animals than was generally supposed, this class, there was every reason to suppose, constituted but a small number of all the causes of the disease.

Dr. Forrest said that in certain sections of the Southern States with which he was familiar phthisis was almost wholly unknown among the whites, but was quite common among the blacks. Yet far more fresh beef and milk were consumed by the white population than by the negroes, who lived principally upon corn and pork. It was also a fact that a very fine stock of cattle was now raised in these same districts. He could not see how, therefore, this condition of affairs could be reconciled with the theory of Dr. Brush.

Dr. Grandin said that a little more than a year ago Dr. M. D. Blain had stated in a paper read before the Section of Public Health of the Academy that 2 per cent. of all cattle killed in the New York abattoirs and 21 per cent. of all the milch cows in the country were affected with tuberculosis.

The President, Dr. Loomis, said it seemed to him that the position taken by Dr. Brush was too narrow a one, and that any one who assumed that phthisis is due to one cause alone was beg-

ging the question. It was a disease that had many causes, and the bacillus which constituted its special etiological agent would not give rise to it unless it met with conditions which favored its development. Among the conditions to be taken into consideration were climate, hygienic surroundings, heredity and soil, and a long list of causes must be in operation before the bacillus was able to do its specific work.

In closing the discussion Dr. Brush said he thought that his position had been somewhat misunderstood. He did not wish to imply that the disease was derived alone from the cow. All that he pretended to claim was, that wherever in-bred cattle existed, there we found phthisis also. It needed no proof to show that but a small proportion of individuals who were exposed to the infection contracted the disease, since, although the number of deaths from phthisis was certainly very great, it would be infinitely larger than it is if this were the case. In addition to the bacillus, there must be present the conditions favorable to its development, as Dr. Loomis had stated.

But, at the same time, he believed that the disease was originally derived from the bovine species. He did not believe that less than 50 per cent. of all dairy cattle were affected with it, while the statistics which he had quoted showed that wherever there was a race of people without cattle phthisis was unknown. He believed, furthermore, that if all the cattle in this country were to be killed the disease would finally die out entirely here. In countries where dairy cattle were introduced for the first time it took a series of years for the disease to become established among the population, as was the case in Thibet and Ceylon; and, in the same way, if all the cattle were removed from a country phthisis would also disappear in the course of some years. Even after the disease had become firmly established, he did not believe that it could maintain its existence indefinitely after the removal of all cattle. He did not wish to rely on statistics except so far as they substantiated the main point that he made, that wherever cattle existed there phthisis also existed. As to the mortality among prisoners, etc., he was quite willing to acknowledge that the infection was derived from persons affected with the disease, and that the existing conditions were peculiarly favorable to the development of the disease. The practical outcome of the whole matter, to which he desired to call special attention, was that the prevalence of phthisis could undoubtedly be diminished by properly regulating by law the breeding of cattle, so that the in-breeding now so common might be done away with.

At the last meeting of the New York County Medical Association Dr. John Shrady read a paper on *Signs of the Moribund Condition*, in which he brought out a number of interesting points. He laid considerable stress upon prognosis, as being

a much neglected study, even though to the patient it was of paramount importance, as involving many questions of individual, legal and social importance. The dying state, he said, could never be arrested. Once begun, it could end only in one way. His conclusions were that, in general, the most trustworthy signs of death are those that appeal to the eye; that among these the respiratory function holds the first rank, both in cases of coma and asthenia, and especially where the two modes of death are combined; that the death by coma has a more extended period of duration; that the most valuable sign of inevitable dissolution is the up-and-down movement of the *pomum Adami*; that temperature changes deserve attention, particularly when the curves are sharp, high and continuous; that intermittent pulse is an early sign of death, particularly when not due to any disturbed action of the nervous system; and that deaths from syncope are too sudden to admit of much observation or study.

P. B. P.

The Causation of Pneumonia.

Dear Sir:—This is an attempt to summarize certain evidence presented in the valuable "Introduction to the Study of Pneumonic Fever" by Edward F. Wells, M.D., being published in THE JOURNAL, and to group that evidence relative to epidemics by seasons of the year with evidence relating to the increase and decrease, by seasons of the year, of pneumonia other than epidemic.

On pages 259-262 of THE JOURNAL for Feb. 23, 1889, Dr. Wells gives a table of chronology of epidemics of pneumonia, stating the country, the year, and the season of the year, in which each epidemic occurred. I have footed his column relative to the season of the year, and find the result as stated in my Table I as follows:

TABLE I.—The reported epidemics of pneumonia in the Northern Hemisphere during the 448 years, 1440-1888, reported by seasons, and estimated by months. (From data in a table on pages 259-60, THE JOURNAL, Feb. 23, 1889.)

Winter.			Spring.			Summer.			Fall.		
Dec.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.
13	25	51	57	27	12	3	1	0	1	3	5
Total 89.			Total 96.			Total 4.			Total 9		

The study of the subject by quarters of the year is not as satisfactory as by months, and especially as I wish to compare the result with my previous studies of sickness from pneumonia by months; therefore I endeavor to learn the probable grouping of epidemics by months.

In Table I, I find that the least number of

epidemics (4) occurred in the summer, and that the greatest number (96) occurred in the Spring. The quarter in which occurred the next to the least number was the fall, therefore the *month* of least epidemics must have been in the summer quarter, but nearer the fall than the spring, it must have been, then, in August. The month of maximum epidemics must have been in the spring, but nearer to the winter than to the summer quarter, therefore in March. Given the months of maximum and minimum epidemics, and dividing the epidemics actually reported in each quarter among the several months so that the month in each quarter to which the largest

probable numbers by months are as stated in the upper line of figures in Table I.

Having, now, the epidemics by months, it is possible to compare them by months with the atmospheric temperature, and with the sickness from pneumonia as recorded in Michigan for many years. This is made possible by Table 2.

The epidemics all seem to have been in the Northern hemisphere, but many of them in climates much warmer than that of Michigan. Inasmuch as it is impracticable to learn just what the average corresponding atmospheric temperature was, it seems best to study the relation of the epidemics to the actual temperature not only in a cold climate, like that of Michigan, but also in a warm climate like that of India. Accordingly the relation in the warm climate is shown in my Table III.

The study of such relations as this of sickness to atmospheric temperature by means of Tables, is complicated because the changes in the sickness may not all be coincident with the temperature changes, but may lay behind them. For this, and other reasons the most satisfactory method of studying such subjects is by means of diagrams, accurately drawn to scale, so that the relations between supposed cause and effect in any one month and of cause or effect in each and every month of the year may be seen at a glance.

Dr. Wells says: "There can be no doubt as to pneumonic fever epidemic as well as sporadic—everywhere and always being due to the action of a single peculiar and specific morbid material." Without attempting to affirm or deny this, I respectfully submit that the evidence which he has supplied in his Table of Epidemics, taken with the evidence heretofore collected by myself, seems to prove that pneumonia—"epidemic as well as sporadic—everywhere and always" is absolutely controlled by the atmospheric temperature, or by conditions associated therewith.

HENRY B. BAKER.

Lansing, Mich., March 18, 1889.

Intubation of the Larynx.

Dear Sir:—An editorial appears in the April 13th issue of your valuable journal, on intubation of the larynx, that conveys an impression that, I hope, was not intended. The impression conveyed is, that intubation being a bloodless operation, is readily consented to, and is performed early and often unnecessarily. Such an impression also prevails extensively among the profession, and it is often said, "Oh! well! all those cases would get well any way." Such statements are peculiarly aggravating when we

¹ THE JOURNAL, Feb. 23, 1889, p. 263.

² Published in article entitled "The Causation of Pneumonia" in Annual Report, Michigan State Board of Health for 1886, pp. 246-324 and in other articles on allied topics, in the past few years.

TABLE 2.—The average per cent. of weekly reports stating presence of sickness from pneumonia in Michigan and average atmospheric temperature, by month, during the eight years, 1877-84. Also, of the reported epidemics of pneumonia in the Northern Hemisphere during the years 1877-84. The data for the reported epidemics of pneumonia are from the Annual Report of the Michigan State Board of Health for 1885, pages 26 and 128.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Sickness from Pneumonia in Michigan.	62	66	62	56	42	27	17	14	18	23	36	48
Average Temperature in Michigan.	21.43	25.60	31.04	44.48	56.60	65.54	70.68	68.85	62.05	51.34	35.99	27.25
The reported Epidemics of Pneumonia.	25	51	57	27	12	3	1	0	1	3	5	13

TABLE 3.—The average cases of sickness from "Respiratory Disease" per 10,000 of the native troops in India, and the average atmospheric temperature, by month, during the three years, 1883-85. Also of the reported epidemics of pneumonia in the Northern Hemisphere during the years 1877-84. The figures for the reported epidemics of pneumonia are from data in a table in THE JOURNAL, Feb. 23, 1889, pages 259-60. The figures for sickness from "Respiratory Disease" and for average atmospheric temperature are from data in the 20th, 21st and 22d Annual Reports of the Sanitary Commissioner with the Government in India.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Sickness from "Respiratory Disease" in India	102.8	71.6	51.8	38.6	33.8	26.6	25.5	23.7	31.5	37.7	59.9	93.8
Average temperature in India	68.7	70.6	79.1	83.9	85.2	84.8	83.3	82.7	82.3	80.5	74.2	69.1
The reported epidemics of pneumonia.	25	51	57	27	12	3	1	0	1	3	5	13

number is assigned shall be next to the quarter in which the larger number is reported, the

remember how many times we are called to perform intubation because the patients are too far gone for tracheotomy, too young, or because the cases are of a too malignant nature to sanction a cutting operation. It must be remembered that nine-tenths of all these cases are in consultation with other doctors, and we are called only as a last resort when all other measures have failed, and when it is evident that death must soon ensue. Many of these cases are moribund, unconscious and well nigh hopeless, others are young, and others again of a malignant nature, so that the favorable cases are few and far between; and yet it is said that the operation is performed early. Such a statement is a reflection not only upon the operator but upon the attending physicians as well.

To illustrate the condition of many of these patients, allow me to mention a few cases.

November 27.—I was called by Dr. O'Malley to see a little girl of 7 years suffering from semi-malignant diphtheria; nasal, pharyngeal and laryngeal. The parents at first objected to the operation, and emetics were repeatedly given in addition to other medication; these failing to give relief, and it being perfectly evident to the parents that the child was surely strangling, consent was given. The doctor acknowledged that the case was too unfavorable for tracheotomy. The child wore the tube four days and recovered completely.

November 30.—I was called by Drs. Steele and Jacques to perform the operation upon a baby 18 months old, "too young for tracheotomy." *Patient recovered.*

December 3.—I was called by Dr. G. W. Webster to operate upon a little girl 4 years old, with semi-malignant diphtheria with invasion of the larynx. The patient was surely dying and "too unfavorable for tracheotomy." The child wore the tube five days and recovered.

January 1.—I was called by Dr. Jacques. Patient 8 years old, moribund, unconscious, limp, and pulseless at the wrist. The tube was introduced without resistance and artificial respiration performed. The patient revived and fully recovered. The doctor stated the child would have been dead in ten minutes.

January 5.—Through the courtesy of Dr. A. L. Thomas, I was called to operate upon a baby 18 months old and moribund, "too young and too unfavorable for tracheotomy." Patient revived, returned to consciousness, but died two days later.

January 10.—Through the courtesy of Dr. Parsons, operated upon a baby 17 months old; moribund at the time of operating. Patient died twelve hours later.

January 18.—Through the courtesy of Dr. Miller, operated upon a baby fifteen months old, "too young for tracheotomy." Patient recovered.

March 12.—I was called by Dr. Kippax to operate upon a boy 7 years old, Drs. Guerin and Jacques being present. The patient was unconscious, comatose and actually dying, but revived and fully recovered.

March 14.—Through the courtesy of Dr. Simons operated upon a patient 5 years old, with malignant diphtheria of the nasal cavities, pharynx and larynx. Patient died from asthenia.

April 8.—Through the courtesy of Drs. Gatchell and Mitchel operated upon a little girl 8 years old, suffering from malignant diphtheria with invasion of the larynx. The patient was moribund, extremities cold, and clammy and pulseless. The patient fully revived, but died the next day from the malignancy of the disease.

April 24.—I was called to see a boy 4 years old a patient of Dr. Marks' who was present at the operation. The boy was upon the point of death from diphtheritic laryngeal stenosis. The child was unconscious, the lips were of a dark purple, almost black, the pulse could not be detected at the wrist, and the child was certainly dying. When the patient had reached this deplorable condition I was hastily summoned, and found the attendants hovering over the child waiting for the last gasp to prove that life was extinct. The operation was performed and artificial respiration resorted to before consciousness was restored. The child fully revived, but died as a result of the hypostatic congestion of the lungs. These are only a few cases among many of like nature, but a sufficient number to prove, I hope, that the operation is not performed early or unnecessarily. Yours respectfully,

F. E. WAXHAM, M.D.

240 Wabash Avenue.

Climatic Influence in Phthisis.

Dear Sir:—In a recent editorial (page 523) THE JOURNAL called attention to the importance of "knowledge concerning the elements that give special character to climate and their influence on the functions of the human body" . . . knowledge "essential" . . . to "every practitioner, who would do justice to those who depend upon him for advice." And yet, as indicated in the editorial, the records of *facts* necessary to give us such knowledge are not usually to be had; we usually obtain only the *opinions* of those who write on this subject, based upon experience which may be valuable, but which opinions, after all, do not greatly advance the science of climatological etiology. It was to supply such records of facts, the absence of which was deplored in the editorial just referred to and in the article by Dr. Denison mentioned therein, that the paper which followed Dr. Denison's at the International Medical Congress, was prepared and

read; I refer to the article entitled, "Relations of Certain Meteorological Conditions to Diseases of the Lungs and Air-passages as shown by Statistical and other evidence." The statistics included tens of thousands of weekly reports of sickness, and records of hundreds of thousands of deaths from phthisis and from disease of the air-passages, in this country and in other countries. These statistics were studied in connection with statistics of the meteorological conditions, and were found to be harmonious; and the writer considered it proved "that the rise and fall of [phthisis and] the diseases of the air-passages are controlled by the atmospheric temperature, and that this is accomplished mainly through the quantity of vapor of water abstracted from the air passages." In the discussion which followed these papers, the writer expressed the opinion that this was a general law,—that if there could be obtained records of phthisis and meteorological conditions in Colorado their relations would be found to be the same as has been found to be true elsewhere, wherever the subject has been studied. If any one doubts this generalization, what is needed is that the facts be recorded, in each locality respecting which there may be doubt, and that these records of facts be brought forward, that they may be studied by those of us who are interested in the subject. I wish most emphatically to indorse the plea in the article by Dr. Denison and in the editorial, for the bringing forward of *facts*, accurately stated by weight, measure or number so that they may be available for building up the science of tiology or of climatological therapeutics.

By this mail I send you a copy of the paper containing the *mortality, morbidity and meteorological statistics* which I have mentioned.

Very respectfully, HENRY B. BAKER.
Lansing, Mich., April 19, 1889.

BOOK REVIEWS.

ELECTRICITY IN THE DISEASES OF WOMEN, with Special Reference to the Application of Strong Currents. By G. BETTON MASSEY, M.D., Physician to the Nervous Department of Howard Hospital; late Electro-Therapeutist to the Philadelphia Orthopædic Hospital and Infirmary for Nervous Diseases, etc. 8vo, pp. viii, 210. Philadelphia and London: 1889.

Taken as a whole the work done by Dr. Massey in his "Electricity in the Diseases of Women," is very satisfactory, and helps to fill a deeply-felt need of the practitioner, viz: a modern scientific work on electricity. The rapid development and recent scientific demonstrations of this subject have rendered former authorities almost absolute,

and as yet comparatively nothing has arisen to take their place.

While Dr. Massey's book covers but a limited portion of this vast subject, it still is in most respects, scientific and will prove of assistance to the practitioner who is desirous of employing electricity as a therapeutic agent.

But little space is occupied by the consideration of the physics of electricity proper, but the detailed experiments given in chapters III and IV are well conceived, and will do much toward clearing up this intricate subject to the minds of the uninitiated, and they should be thoroughly mastered by the practitioner who is ambitious to employ electricity intelligently. The remainder of the book is mainly a compilation from articles which have appeared from time to time in various medical journals during the past three years, and in most respects lacks originality save in the detail of cases.

Many of the more ordinary difficulties met with by the gynæcologist, such as menorrhagia, sub-involution, hyperplasia, pelvic induration, pelvic pain—including obstructive and nervous dysmenorrhœa—uterine stenosis, intermenstrual neuralgia, uterine displacements, amenorrhœa and hydrosalpinx, all are treated by the electrical means indicated, and with results which coincide with those reported by the majority of operators employing similar methods.

By far the greater portion of the book is devoted to a description of Apostoli's work. In chapter V. is considered the intra-uterine galvano-chemical cauterization (Apostoli's operation), as employed in the treatment of fibroid tumors and chronic metritis. The different steps of the operation are clearly described, and the electrodes and appliances illustrated. It is to be regretted in this connection that the author recognizes no form of intra-uterine flexible electrodes other than the stiff platinum sound, because in consequence a greater proportion of cases of fibroid tumors with tortuous canals must submit to the more dangerous operation of galvano-puncture. This subject naturally forms the most important portion of the book, and is worthy the time devoted to it.

A chapter is devoted to the consideration of Extra-Uterine Pregnancy, electrically treated, and one to "Contra-indications and Limitation to the use of Strong Currents."

To the conservative practitioner this book offers a safe and effectual method of treatment for many difficulties which have in the past been a serious perplexity to him, while to the unscrupulous operator it should come as a grave reproach for the severe measures so often unnecessarily and unjustifiably employed, and it is to be hoped that through its influence some little may be accomplished toward righting this great wrong.

F. H. M.

MISCELLANY.

ILLINOIS STATE MEDICAL SOCIETY MEETING at Jacksonville, May 21, 1889. The following action was taken by the Society at the last meeting:

WHEREAS, It has been demonstrated by the experience of the past years that the present constitution, by-laws and rules of the Illinois State Medical Society have become totally inadequate to a proper and satisfactory carrying out of the aims and purposes for which said constitution, by-laws and rules were formulated; be it

Resolved, That a committee of five members be appointed, whose duty it shall be to secure from the Secretary of State a charter for this Society under the law providing for the incorporation of organizations, not for pecuniary profit.

Resolved, That this committee be empowered and is hereby authorized to draw up a new constitution and new by-laws for the future government of this Society.

Resolved, That said committee be required to mail every member of this Society a printed copy of the proposed constitution and by-laws at least sixty days prior to the next annual meeting, in 1889.

Resolved, That the consideration, amendment and adoption of the proposed constitution be the special order at its next meeting, immediately following, as nearly as possible, the delivery of the President's address.

It is specially important that there be a full attendance at the meeting this year, not only of the permanent members of the Society, but of representatives from all local societies of all parts of the State, as many important questions will come up affecting the future of the Society and its influence on the medical interests of the whole State.

Those expecting to present volunteer papers should notify the Committee of Arrangements as early as possible.

The Committee of Arrangements has secured reduction of railroad fare for members and delegates, on the certificate plan. Each delegate should get certificate from his local agent, of having paid full fare to the meeting.

The Constitution of the Society requires all members and delegates to register and present their credentials before participating in any business of the meeting. Registration will begin at 9 o'clock, A.M., on Tuesday, at the Hall. It is desired that as many as can do so, will register before the Society is called to order.

BARIUM sells for \$975 a pound, when it is sold at all, and calcium is worth \$1,800 a pound. Cerium is a shade higher—its cost is \$160 an ounce or \$1,920 a pound.

HEALTH IN MICHIGAN, APRIL, 1889.—For the month of April, 1889, compared with the preceding month the reports indicate that intermittent fever, rheumatism and remittent fever increased, and that influenza, pleuritis and pneumonia decreased in prevalence.

Compared with the preceding month, the temperature in the month of April, 1889, was higher, the relative humidity was less, the absolute humidity and the day and the night ozone were more.

Compared with the average for the month of April in the three years, 1886-88, measles and inflammation of kidney were less prevalent in April, 1889.

For the month of April, 1889, compared with the average of corresponding months in the three years 1886-'88, the temperature, the absolute humidity, the relative humidity, the day ozone and the night ozone were about the same.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of April, 1889, at 23 places, scarlet fever at 43 places, typhoid fever at 5 places, measles at 14 places, and small-pox at 1 place.

Reports from all sources show diphtheria reported at 6 places less, scarlet fever at 11 places more, typhoid fever at 3 places less, measles at 2 places more, and small-pox at 4 places less in the month of April, 1889, than in the preceding month.

LETTERS RECEIVED.

Dr. Perry H. Millard, St. Paul, Minn.; H. Weitz, Montpelier, O.; Dr. Osada Kotaro, Osaka, Japan; Dr. C. R. Reed, Middleport, O.; Pennsylvania Vaccine Co., Chambersburg, Pa.; Dauchy & Co., New York; Dr. C. H. Franklin, Union Springs, Ala.; Dr. R. W. Thrift, Lima, O.; Dr. E. G. Cochran, Jimulco, Mexico; Dr. O. C. Shirley, Pink Hill, Mo.; Dr. G. E. Brown, Las Animas, Col.; Dr. E. P. Becton, Sulphur Springs, Tex.; J. H. Fullbright, D. B. Harvey, W. Hall, D. H. Busk, Louisville, Ky.; D. E. Shane, Lawrence, Kan.; Dr. W. N. Yates, Cincinnati, Ark.; Dr. W. M. Moore, Ben Franklin, Tex.; Canton Surgical & Dental Chair Co., Canton, O.; Dr. J. J. Bland, Howma, La.; Dr. B. Erp-Brockhausen, Lansing, Ia.; Geo. F. Lasher, Philadelphia; H. G. Fairbanks, Halifax, N. S.; Eisner & Mendelson Co., Fairchild Bros. & Foster, New York; Ed. P. Stevens, Boston; Dr. Boyd Cornick, Mascoutah, Ill.; Lutz & Movius, New York; Z. Orto, Pine Pluff, Ark.; Dr. P. H. Brooke, Lima, O.; Dr. A. C. Ames, Hebron, Neb.; Dr. G. L. Magruder, Washington.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 4, 1889, to May 10, 1889.

Based on surgeon's certificate of his disability, leave of absence for one month, with permission to leave the limits of the Department, is granted Surgeon W. H. Forwood, Medical Dept., Ft. Snelling, Minn. Par. 1, S. O. 35, Hdqrs. Dept. of Dakota, St. Paul, Minn., April 8, 1889.

Asst. Surgeon Valery Havard, relieved from duty at Ft. A. Lincoln, Dak., and ordered to Ft. Buford, Dak.

Asst. Surgeon L. W. Crampton, relieved from Ft. Bridger, Wyo., and ordered to Ft. Lyon, Cal.

Asst. Surgeon W. G. Spencer, relieved from Ft. Yates, Dak., and ordered to Ft. Bridger, Wyo.

Asst. Surgeon R. L. Robertson, relieved from Ft. Buford, Dak., and ordered to Ft. A. Lincoln. Par. 29, S. O. 95, A. G. O., April 24, 1889.

Capt. William C. Borden, Asst. Surgeon U. S. Army, relieved from duty at Ft. Ringgold, Texas, and ordered to report to the commanding officer at San Antonio, Texas, for duty at that post. Par. 7, S. O. 100, A. G. O., May 1, 1889.

STATE MEDICAL ASSOCIATION MEETINGS IN 1889.

STATE.	SECRETARY'S NAME AND ADDRESS.	TIME AND PLACE.
Arkansas.	L. P. Gibson, Little Rock.	Pine Bluff, May 23.
Colorado.	H. W. McLauthlin, Denver.	Denver, June 18.
Connecticut.	H. E. Wordin, Bridgeport.	Hartford, May 22.
Dakota.	N. E. McNutt, Aberdeen.	Mitchell, June 20.
Delaware.	J. E. Ellegood, Laurel.	Dover, June 11.
Illinois.	D. W. Graham, Chicago.	Jacksonville, May 21.
Indiana.	E. S. Elder, Indianapolis.	Indianapolis, May 21.
Iowa.	S. S. Lytle, Iowa City.	Keokuk, May 15.
Maine.	C. D. Smith, Portland.	Portland, June 11.
Massachusetts.	F. W. Goss, Boston.	Boston, June 11.
Minnesota.	C. B. Wetherle, St. Paul.	Minneapolis, June 20.
Missouri.	J. C. Mulhall, St. Louis.	Springfield, May 21.
Nebraska.	A. S. v. Mansfelde, Ashland.	Kearney, May 21.
N. Hampshire.	G. F. Conn, Concord.	Concord, June 18.
New Jersey.	Wm. Pierson, Orange.	Spring Lake, June 4.
New York.	E. D. Ferguson, Troy.	New York, Sept. 25.
Ohio.	G. A. Collamore, Toledo.	Youngstown, May 21.
Oregon.	C. C. Strong, Portland.	Portland, June 11.
Pennsylvania.	W. B. Atkinson, Philadelphia.	Pittsburgh, June 4.
Rhode Island.	G. D. Hershey, Providence.	Providence, June 13.
Tennessee.	D. E. Nelson, Chattanooga.	Nashville, June 19.
Vermont.	D. C. Hawley, Burlington.	Brattleboro, Oct. 27.
Virginia.	L. B. Edwards, Richmond.	Burlington, Oct. 17.
West Virginia.	J. L. Fullerton, Charlestown.	Roanoke, Aug. or Sept.
		W. Sulphur Springs.

THE

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

Vol. XII.

CHICAGO, MAY 18, 1889.

No. 20.

ORIGINAL ARTICLES.

EPICYSTIC SURGICAL FISTULÆ FOR CYSTOSCOPIC EXPLORATION; IN- TRA-VESICAL TREATMENT AND DRAINAGE.

Read before the State Medical Association of Alabama, April 11, 1889.

BY JOHN D. S. DAVIS, M. D.,
OF BIRMINGHAM, ALABAMA.

Epicystotomy has become an established and frequently practiced procedure, and the dangers incident to opening the bladder through the abdominal wall is so slight that patients suffering from almost any vesical trouble are encouraged to have the bladder opened for diagnostic purposes and treatment at a time when the general health remains unimpaired; a practice which, a few years ago, would not have been resorted to by the most aggressive surgeon.

Catarrh of the bladder, irrespective of its cause, is always followed by a series of consecutive pathological changes which, independently of the partial or complete interruption of the passage of the urine, tend to destroy life. A dilatation of the bladder and ureters by retention of urine may give rise to such a degree of distention as to destroy life from suspension of important functions by mechanical pressure. During the stage of inflammation a paretic condition may occur, the blood-vessels in the vesical wall lose their support, and transudation and exudation take place into the paravascular tissue, which, combined with capillary stasis attending this stage of the disease, results in sloughing, infiltration, pyæmia, peritonitis and death. The damming up of the urine may, and does often, cause surgical-kidney, epididymitis and tetanus.

The treatment of chronic vesical catarrh resolves itself into a consideration of the causes producing the disease, many of which, the presence in excess of certain inorganic constituents of the urine, stone, stricture and hypertrophy, are capable of correction; whilst others—such as malignant tumors and certain conditions of the prostate—may only admit of a palliation of the symptoms to which they give rise and the removal of which must be the first object in treat-

ment. But when a paretic condition of the bladder exists provision must be made for the complete continuous emptying of the viscus; its thorough cleansing by frequent irrigation with hot sterilized water; and the promotion of a healthy tone in the mucous membrane and muscular structure of the bladder. The frequent introduction of catheters for drawing off residual urine and washing out the bladder has been productive of much harm, and, instead of giving relief, proved to be, by reason of their frequent introduction into the inflamed bladder to draw off the urine two or three times a day, a source of immediate and alarming symptoms. These facts are cogent reasons for adopting surgical means in all cases of intra-vesical troubles as soon as a diagnosis can be made, and often when it can not otherwise be made, for the complete emptying of the bladder, thorough cleansing, diagnosis, and intra-vesical treatment.

The epicystic surgical fistula is designed for drainage, intra-vesical treatment and cystoscopic exploration, and may be divided for consideration under the following heads:

- I. Definition of epicystic surgical fistula.
- II. Surgical resources in the formation of the epicystic surgical fistula.
 1. Preparation for the operation.
 2. Anæsthesia.
 3. Position.
 4. Incision and opening bladder.
 5. Intra-vesical exploration and treatment.
 6. Toilette and after-treatment.
- III. Advantages of the epicystic surgical fistula.
 1. Cystoscopic exploration.
 2. Intra-vesical treatment.
 3. Drainage.

I.—DEFINITION OF EPICYSTIC SURGICAL FISTULA.

Epicystic Surgical Fistula is the title here given to a supra-pubic fistula into the bladder created by the surgeon for exploration, intra-vesical treatment and drainage. A fistula, which, acting as an artificial urethra, is capable of giving free access to the inside of the bladder for cystoscopic exploration to provide a ready, convenient and comfortable means of emptying the

bladder at will, and gives the surgeon a competent opening into the viscus for intra-vesical applications.

It constitutes an essential element in the speedy and complete evacuation of the contents of the bladder in all epicystic operations, and imitates nature in the restoration of its own continuity and repair as the pathological changes within the bladder subside.

II.—SURGICAL RESOURCES IN THE FORMATION OF THE EPICYSTIC SURGICAL FISTULA.

1. *Preparation for the Operation.*—The presence of two assistants, though not necessary, may be of valuable aid. A temperature of 80° or 85° Fah. should be maintained in the operating room from the beginning to the end of the operation. All hair is to be shaved from the pubis and all the details of antiseptic surgery are to be carried out so far as cleaning the pubis and abdomen. The bladder is emptied and thoroughly washed with warm water. When the water returns clean the bladder is slowly distended with warm sterilized water thrown into the bladder by means of a fountain syringe, with nozzle in urethra—a degree of pressure sufficient to distend the bladder to its utmost capacity—which can never be too great for the resistance of the bladder. It is better to fail in filling the bladder than to distend the bladder beyond the limit of competency. Indeed it is not necessary to fill the bladder to any degree of resistance. I have operated when the bladder was in an irritable condition and would not tolerate distention greater than the capacity of two ounces, and had no difficulty in avoiding the pre-vesical fold of peritonæum of finding the bladder. The water is secured in the bladder by tying the penis at the base with a rubber tube.

A colpeurynter is next to be well oiled and inserted into the rectum—the rectum having been previously emptied by enema—and filled with warm water. This distention brings the bladder into view above the pubis.

2. *Anæsthesia.*—My preference for chloroform is the result of my own personal experience with it. It is not free from objections as its depressing effect on the heart is well known. The operation usually occupies fifteen minutes; and, hence, its prolonged use would be unnecessary and uncalled for. The objection to ether is the suppression of the excretions and the frequency with which bronchitis is produced when administered to persons advanced in years. The best course to pursue, when the operation is prolonged, is to follow the use of chloroform by ether. The patient must be kept profoundly under the influence of the anæsthetic from the first incision until the superficial wound is closed.

3. *Position.*—The patient is placed on the back on an ordinary operating table with the legs extended as if in a position for perfect comfort and

rest. Many surgeons claim advantages in the position recommended by Trendelenburg. Eigenbrodt emphasizes the fact¹ that the elevation of the pelvis in Trendelenburg's position² helps the surgeon to avoid the pre-vesical peritoneal fold at the time of the incision of the bladder.

I have employed this posture for intra-vesical operation by means of the supra-pubic incision with no advantage over the ordinary flat-back position. With two openings in the bladder for a continuous stream of clear water I have no trouble in illuminating every part of the bladder with the electric surgical light and thus enabled to examine the entire intra-vesical wall. Undoubtedly the position recommended by Trendelenburg, possesses advantages which to the author more than myself, makes it highly ideal. As for myself I prefer and recommend the flat-back position.

4. *Incision and opening bladder.*—A perpendicular incision three or four inches long is made in the median line above the symphysis pubis. The recti muscles are separated to symphysis. If the pyramidalis are in the way, the fibres should be cut. The transversalis fascia is divided on a grooved director from symphysis to within one inch of upper margin of superficial wound. Instead of following Guyon's manœuvre, I catch the bladder with a tenaculum on a line with the symphysis, through the pre-vesical fat, and cut through with a bladder knife into the bladder with one smooth, clean incision, to prevent undue disturbance of the cellulo-adipose tissue between the bladder and pubis and avoid infiltration. I have never seen a case where it was necessary to put up the pre-vesical fat, and with it the peritonæal cul-de-sac. If the bladder is caught on a line with the symphysis and cut downwards, no fears need be had for the peritonæum. Cutting this pre-vesical fat prevents its after dropping down over the opening into the bladder and acting as a valve to prevent easy escape of urine and causing infiltration. And, too, such a procedure gives a smooth incision throughout, and it is almost impossible to have infiltration, even when no drainage tube is left in the bladder and the urine is left to flow out through the fistulous track and taken up by a layer of absorbent cotton. In making the incision into the bladder, no attention is to be paid to any vein or veins which are sometimes met with. If cut, they will stop bleeding when the bladder is dropped back and the rectal bag removed. The operation is usually bloodless in the sense of hemorrhage. I have operated without the patient losing more than one drachm of blood.

5. *Intra-vesical exploration and treatment.*—The finger is carried into the bladder and a

¹ L. c., p. 72 Cf. Lang, Med. News, Dec. 4, 1886

² In Trendelenburg's position the patient's legs are held over the shoulders of an assistant with the body resting on an incline table, much in the position which hogs are swung for spaying

thorough search made for any tumors, villous growths or foreign bodies. The bladder is now emptied and the rubber around penis untied and the bladder well washed out with hot sterilized water. The bladder can now be examined with the cystoscope and surgeon's electric light. If tumors be found if practicable they should be removed; villous growths and any foreign body found should be removed. If nothing is found in the bladder, the surgical fistula, in the absence of malignancy, will be all that is required to relieve the cystitis.

6. *Toilette and after-treatment.*—The bladder is allowed to drop back into the pelvis and the superficial wound so closed by two sutures (including the skin and superficial fascia only), in the lower portion of the incision and one in the upper portion of the incision, as to leave a fistulous track of equal size from bladder to juncture of upper third and middle third of the superficial incision. A large rubber catheter is now to be introduced into the bladder through the opening and its distal extremity allowed to enter a urinal placed in the bed between the patient's thighs, or preferably at the patient's side. Professor F. Trendelenburg, director of the surgical clinic of the University of Bonn, proposed, for draining the bladder in supra-pubic lithotomy, the T-tube in latero-abdominal position and open wound treatment as the simplest, safest and best. He makes an antiseptic dressing of iodoform gauze around the T-tube. There can be no real necessity for a tube of any kind to be introduced into the bladder for the purpose of conveying the urine from the bladder to prevent infiltration, irritation of superficial fascia and soiling of dressings.

If the urine is kept acid, by the administration of citric acid or some other more palatable acid drink, no better antiseptic than the acid urine can be secured for the constant bath of the parts. It should be allowed to flow out through the wound and absorbed by a pad of absorbent cotton placed loosely over the wound, and removed as often as soiled by the outflowing urine. By this method of emptying the bladder, no possible small amount of urine can be impeded in its outward flow, which is the case around and outside of the tube, when catheter or tube is left in for any length of time—a source of no little annoyance at times. This little collected or retained urine, around the outside of the tube alone, I have seen produce a hard chill and elevation of temperature, and become for the time an immediate, alarming and aggravating source of trouble. I never have seen the skin made sore or chafed by the outflowing urine in epicystotomy, or from its after-escape through the surgical fistula.

The bladder should be washed out twice daily with hot sterilized water, by means of a fountain syringe, with its nozzle introduced into the

urethra, the water escaping through the epicystic fistula and guided into a bed-pan under the patient. The superficial stitches are taken out at the end of a week, and intermittent catheterization by the fistula is then resorted to for the sole purpose of training the fistula and prevent its rapid closure. It is not necessary to catheterize for the purpose solely of drawing off the urine. In one case I never drew the urine save for the purpose of analysis, but occasionally introduced a rubber bougie to prevent the closure of the fistula. The drainage by the fistula alone is admirable, and the fistula will be well formed in twenty or thirty days, competent to retain urine without dripping and to allow its escape in a good projecting stream at will. With no tearing of the tissues, and with a clean cut, the drainage is perfect and the dangers are *nil*.

III.—ADVANTAGES OF THE EPICYSTIC SURGICAL FISTULA.

1. *Cystoscopic Exploration.*—Nitze has by means of the cystoscope been enabled to diagnosticate tumors of the bladder in nine cases in which rectal palpation, the sound and other means had furnished negative results. One of the great difficulties in the cystoscopic exploration of the bladder is the presence of pus, mucus, and sometimes blood, which renders it exceedingly difficult to maintain a translucency of the fluid used to distend the bladder. By means of a simple fountain syringe a constant current of clear water may be kept within the bladder so essential to a complete observation of the trigonum Lieutaudii, the most interesting part of the viscus, the ureters; and to examine any affection of that viscus. The fistula may be made for temporary purposes of cystoscopy by the Peterson-Guyon-Perier operation; but I can see great advantages from a different operation, by Dr. Hunter McGuire, the object of which tends to eliminate as well as detect the trouble within the viscus; and, too, in the final construction of a permanent fistula, gives an easy after-method of exploration, and makes a better artificial method by reason of its length and extension upwards of two to three inches. Diagnostic purposes are met by the possibility of immediate detection of all local conditions, such as tumors, calculi, foreign bodies, neoplasms, the collection of fluids from the ureters, etc.

2. *Intra-vesical Treatment.*—Having by means of the epicystic exploration revealed the true nature of the intra-vesical trouble, the treatment resolves itself into the immediate necessities of the case. For instance, prostatectomy may be necessary, villous papilloma may be found and should be remedied; predunculated growths may be found which should be removed by the scissors or Paquelin's cautery, etc. In such cases, the opening in the bladder sufficient to introduce the

finger, should be enlarged downwards under the symphysis pubis, and the operation indicated should at once be performed. The object of the formation of the permanent surgical fistula is to meet the after indications in such operations, the details of which does not properly come within the province of this discussion. However, it is sufficient to state, what is reasonable and practicable, that a better means by which the intravesical wall can be reached and treated therapeutically has not yet been devised.

3. *Drainage.*—Permanent after-drainage in all intra-vesical operations cannot be necessary; but is highly essential to secure good and sufficient drainage until the paravascular tissue is disengorged, the cystitis is relieved, and the urine becomes normal and passes per urethra unobstructed. And until this end is attained complete artificial arrangement for the escape of the contents of the viscus must be made. In such cases of prostatic hypertrophy or malignant growths when removal of the obstruction is impossible or contra-indicated, the epicystic surgical fistula is clearly indicated, and essentially necessary. It meets every possible indication for local treatment and gives the only controllable, ready and free drainage to viscus and kidneys. Urinary back pressure as the result of incompetency of the urethra from the various immovable prostatic troubles is often an immediate and remote cause of surgical-kidney, which can only be removed or relieved by suprapubic drainage. In conditions of the bladder, of long standing cystitis, as in the case reported by me in the *Virginia Medical Monthly*,³ in which the urethra, though made competent by cutting, was not sufficient to keep the bladder emptied without catheterization—a procedure which kept up a constant vesical inflammation, which, combined with capillary stasis attending the inflammatory process resulted in paresis.

I now have the pleasure of introducing that case, Mr. T. A. Nixon, to you fifty-eight days after the operation. His condition to-day is sufficient guarantee for all I have said in favoring the formation of an epicystic surgical fistula for the relief of chronic vesical catarrh. The result in this case is more than I promised. He can retain his urine several hours and without dripping of urine or pain to bladder. Urine completely under control and bladder relieved of pain.

A CASE OF SENILE CHOREA; WITH REMARKS.

Read before the Philadelphia County Medical Society, March 13, 1889.

BY J. M. ANDERS, M.D.,
OF PHILADELPHIA.

By the majority of authorities, chorea in aged persons is believed to be rare. Not many years

ago, writers on the subject of chorea held that old age was of itself conclusive evidence that this disease did not exist in any given case. But since the collection and publication of twelve cases by Robert Saundby,¹ in 1884, the fact that senile chorea is a distinct affection can no longer be doubted. From ordinary chorea, which usually occurs during the period of approaching puberty, it differs widely as to etiology, and, probably, pathology as well. Believing that the extreme rarity of the occurrence of chorea in the aged fully justifies those practitioners of medicine who meet with it in publishing an account of their cases, I make no apology for placing on record the following case, which came under my notice at the Episcopal Hospital. The resident physician, Dr. G. B. Tullidge, has kindly furnished notes of the case, to which only slight additions have been made.

J. B., æt. 60 years, occupation cloth-cutter, was admitted to the medical ward of the Episcopal Hospital August 27, 1888. Patient, prior to present trouble, was in most excellent condition. He has had small-pox, three attacks of gonorrhœa, and acute articular rheumatism, all over thirty years ago. His habits have ever been temperate, although he has occasionally indulged in alcoholic drinks. His father, of sound body, was drowned. His father's brother died of old age at 90 years, and his mother, prior to death from cholera, in 1847, had always been in vigorous health.

He attributed the present attack to exposure while at Atlantic City in July, 1887. One hot night he slept with his head on the sill of an open window; the wind changed, the temperature fell, and he awoke cold, chilly, and suffering with pain and stiffness in the muscles of his neck. From that morning began the symptoms now complained of. The patient, an American by birth, has always lived in Philadelphia, is 5½ feet tall, and spare, though as well nourished as he has ever been. He comes complaining of his inability to keep at rest while awake, of oft-recurring attacks of fidgets. The attacks have so increased in severity and frequency as to compel cessation from work. There is a slightly increased prominence of the nape of the neck, though no actual deformity of the cervical portion of the spinal column is discernible; and his head is constantly held more rigidly erect than would be expected of a man of his age. During an attack the muscles of the neck, back and chest undergo irregular spasmodic contractions, causing shrugging of shoulders, twitching of arms, and well-marked jerking of head, which is thrown in the backward direction. The face also is thrown into movement, and exhibits characteristic choreic grimaces, with rolling of eyeballs. As the attack proceeds, the diaphragm becomes similarly affected, causing great difficulty in breathing. Inspirations are jerky and irregular.

³ *Virginia Medical Monthly*, April, 1889. *Alabama Medical and Surgical Age*, April, 1889. *New York Medical Journal*, April 13, 1889.

¹ *Lancet*, November 24, 1884, quoted by Sinkler.

The accompanying dyspnoea is always a most prominent and distressing symptom. During the attack, great pain is felt in the back of the head and neck. Each exacerbation lasts from one to four hours. During the intervals he feels quite well; and has only an occasional involuntary twitch. Insomnia is very great, and night follows night before he procures refreshing sleep. The intervals of quiet vary considerably in length; one, two, three or more days may intervene between these attacks. His appetite is fair, and his digestive functions are performed with apparent vigor and regularity. The action of the heart is constantly rapid, the pulse-rate ranging from 110 to 120 per minute, but there are no evidences of organic valvular disease detectable. Neither are there any characteristic subjective or objective symptoms present, pointing to any nervous trouble other than chorea. There is no dementia.

When admitted he was placed on a mixture of quinia, iron and strychnia; also was given 10 grs. of bromide of potassium every three hours. This treatment was continued for three weeks without benefit. The bromide of potassium has been mentioned by Charcot as being of service in this disease. Arsenic, which was administered both by the gastro-intestinal route and hypodermatically, proved valueless, as did also antifebrin given in doses of grs. iv every three hours. During the attacks, hypodermatic injections of morphia gave relief, causing sleep. The hydrobromate of hyoscin—a remedy recommended by Dr. S. Weir Mitchell, seemed to have a beneficial effect when first used, though it soon lost its virtue.

But, though treatment was apparently of no avail in this case, Charcot's view that chorea in the aged is incurable is not supported by all of the facts, since Dr. Russel relates a case that recovered at the expiration of three months, from the use of sulphate of zinc.

Dr. Sinkler has reported two cases, one of which recovered in four months. Still another case, first seen by Dr. Saundby when the patient was 50 years of age, suffering from left-sided chorea of an intermittent form, again fell under his observation when 66 years old, and at this time was almost cured.

Is senile chorea due to emotional causes? The emotional theory was advocated by Charcot in his famous lecture bearing the caption "Chorea in Old People."² But, as pointed out by Saundby, this view must, in the light of facts more recently observed, be abandoned. The two cases reported by Charcot (*loc. cit.*) were demented; also a case reported by E. J. Davis,³ and still another by M. Bacon, in which instance the patient had chronic mania.⁴ Thus, in a total of thirteen recorded cases, in all of which the mental condi-

tion was noted, four were demented—less than one-third.

Dr. Saundby saw three patients suffering from this disease, all of whom had advanced degeneration of the arteries. This observer believes "that it will be found that the pathology of this disease is some actual structural change, such as small hæmorrhages in the corpus striatum, and that it is not merely a functional derangement." In my own case there were present evidences of commencing atheroma. Of all the collectable cases, only four showed this condition—too small a proportion to base thereon positive conclusions.

The influence of sex may be shown to be considerable, since in eleven of the thirteen cases reported, the sex has been noted, and of these eight were males, three females. This would appear to be an exact reversal of the influence of sex in chorea occurring among children, for in the latter, according to the statistics of Dr. Wharton Sinkler,⁵ and others, the ratio is about three to one in favor of the girls.

Of the thirteen cases, only three were associated with heart disease, a fact showing but a feeble, if any, connection between senile chorea and cardiac affections. Not more than two of the total number gave a history of previous rheumatism. A final point to be made is that any theory of the pathology of chorea in the aged, based upon the meagre data at present attainable, must be purely speculative.

DR. WHARTON SINKLER: I have recently had the opportunity of seeing this patient of Dr. Anders, at the Philadelphia Hospital, where he is now under the care of Dr. Lloyd. The movements seem to be pretty much as they were when he was at the Episcopal Hospital. I think that cases of senile chorea are not quite so rare as one would suppose from the literature of the subject. I have frequently seen in old persons an irregular choreic movement of the extremities. I have now under my care an old gentleman, aged 80, in whom there are choreic movements of the left arm and leg. On inquiring in reference to the duration of this movement, I learned that it had not been before observed either by the patient or his relatives. In this case there was a transient attack of right hemiplegia a couple of years ago. In senile chorea I think that there must be an organic lesion, due probably either to small hæmorrhages or embolism in the corpus striatum.

DR. WILLIAM OSLER: I think that senile chorea must be entirely separated from ordinary juvenile chorea. Almost all cases of senile chorea are probably associated with organic changes, whereas the evidence is uniformly in favor of the view that the chorea of children is very largely a functional disorder.

DR. ANDERS: I have in my paper pointed out

² Medical Times and Gazette, 1873, vol. i, p. 245.

³ "Case of Chorea in the Aged," Medical Times and Gazette, vol. ii, p. 447.

⁴ Quoted by Saundby.

⁵ Pepper's System of Medicine, vol. v, p. 441.

that the chorea of the aged differs widely from chorea of childhood. I notice the influence of sex, and the fact that in children the results of treatment are, as a rule, quite satisfactory, while in the aged, with the exception of one or two instances, treatment has had but little effect. This would seem to indicate that there was some pathological lesion present in the chorea of aged persons to explain the difference in the results of treatment.

HYDROPHOBIA.

Read in the Section on Anatomy, Physiology and Pathology, of the Medical and Chirurgical Faculty of Medicine.

BY WILLIAM H. WELCH, M.D.,

CHAIRMAN OF THE SECTION.

[Reported by DR. WILLIAM B. CANFIELD]

Although since Pasteur's first publications on this subject, it has received the widest ventilation in medical journals, no apology is needed for a fresh critical review, so rapid are the additions to our knowledge and to such an extent does the estimation of the value of much of Pasteur's work depend upon results which can be determined only by the lapse of time. Although Pasteur's preventive inoculations against hydrophobia constitute the central point about which controversy has waged, it is not to be forgotten that Pasteur's discoveries and the investigations aroused by them have shed much light in many directions upon one of the most mysterious and fatal diseases. We are better able now than ever to consider the efficacy of the Pasteurian inoculations against hydrophobia.

He reported the results of the post-mortem examinations he had made in three cases of hydrophobia in human beings. In one case he had made serial sections of the medulla oblongata and pons from the 2nd cervical nerve upwards. The lesions in this neighborhood were small hæmorrhages, accumulations of leucocytes in large numbers in the peri-vascular lymph spaces and in scattered foci in the neroglic and thrombi, composed of blood-plates and of leucocytes in small blood-vessels. These lesions were for the most part microscopical and their extent and distribution could be determined only by the examination of a large number of sections from different parts. The lesions were especially well marked in and near the nuclei of origin of the spinal accessory, pneumogastric and glosso-pharyngeal nerves, and in the motor nucleus of the trigeminus. Cases have been reported in which even more extensive lesions than those have been found, their severity depending apparently in large measure upon the duration of the disease. While it cannot be claimed that these lesions are peculiar to hydrophobia, or by themselves suffice for its anatomical diagnosis, it is incorrect to suppose that hydrophobia is a disease without demonstra-

ble anatomical lesions which bear a manifest relation to the symptoms of the affection.

Far more important than this the addition to our knowledge of the pathological anatomy of rabies following Pasteur's discoveries, are the contributions to a better comprehension of the causation of the disease. Before Pasteur's publications on hydrophobia, dating from 1881, about all that we knew of the virus of rabies was that it is contained in the salivary glands and their secretions and that infection often follows the bites of rabid animals. We now possess valuable information concerning the properties of the rabid virus, its distribution in the infected body, the manner of its transmission, the singular differences in its action, according to the seat of its inoculation, and the means for producing immunity against its invasion.

Although there is no reason to doubt that the infectious agent in the virus of rabies is a micro-organism, no actual demonstration of this organism has yet been made. From material obtained from a series of rabbits which were inoculated at the Pathological Laboratory of the Johns Hopkins University with hydrophobic virus obtained from the medulla oblongata of a man dead of the disease, and which served to confirm the statements of Pasteur as to the behavior of these animals when inoculated with the rabid virus, efforts were made to demonstrate, both in the tissue and by means of cultures, some specific micro-organism, but with entirely negative result. While we are not acquainted with the specific organism causing hydrophobia, we know many of its properties.

The virus of rabies is destroyed by comparatively low temperature, exposure for one hour to a temperature of 50° C. [122° F.] sufficing for this purpose. It is killed in a short time by drying, certainly within four days when exposed in thin layers capable of rapid desiccation. It is destroyed by exposure to the direct rays of the sun, even when surrounded by conditions preventing much elevation of temperature. According to Babes, the virus is more resistant to the action of corrosive sublimate and carbolic acid than most micro-organisms, but it usually loses its infectious properties after exposure for three hours to the action of 0.1 per cent. sublimate, or of 1 per cent. carbolic solution. Galtier has pointed out the important fact that the virus of rabies may be demonstrated after forty-four days, and perhaps longer, in the cadavers of buried animals. A practical means of preserving the virus is to place the brain or cord of the infected animal in pure glycerine, which may be diluted with water, and should be occasionally changed.

It has been ascertained that the occurrence of infection with rabies depends largely upon the part of the body and the character of the tissues into which the virus is inoculated. The disease

always develops after inoculation of the virus into the brain or upon its surface, or into the eye, the period of inoculation being shorter and more definite after subdural inoculations. Inoculations into the substance of nerve trunks appears to be equally successful in rabbits, but somewhat less certain in dogs, although even with the latter inoculation into the pneumogastric nerves does not fail. Intravenous injection does not produce the disease in the ruminants unless very large quantities are used, and may fail in rabbits and especially in dogs. Especial importance attaches to the behavior of subcutaneous injections of the virus of rabies. Dogs often resist infection from injection of considerable quantities of even the most intense virus into the subcutaneous tissue. Ferran's super-intensive method of producing immunity in human beings, is to inject at once the strong virus into the subcutaneous tissue, and this has been done in over 200 cases without injury. If the injection be made into muscular tissue infection is more likely to follow. DiVestea and Lagari have shown that while simple subcutaneous injections are often unsuccessful in producing rabies, the application of the virus to the divided ends of nerve filaments in a cutaneous wound is generally efficacious in causing the disease. Although deep and severe bites of rabid animals are the most dangerous, hydrophobia may result simply from a mad dog licking a scratch.

One of the most important discoveries of Pasteur is the demonstration of the fact that in animals or human beings which have died of hydrophobia the virus is contained most abundantly in the central nervous system, and especially in the medulla oblongata. It is found constantly also in the salivary and lachrymal glands, sometimes in the pancreas, but it is usually absent from the blood, kidneys, spleen and liver. Only exceptionally is it present in the mammary glands and the neck. It is very rarely transmitted to the fœtus through the placenta.

There has been considerable discussion as to the manner in which the virus is conveyed from the seat of inoculation to the central nervous system. The evidence points to the transmission of the virus along the nerve, in fact it is claimed by Helman and others that the virus is capable of multiplication in nervous substance. Roux and others have found the virus present in the nerves of a bitten extremity when it has been absent in corresponding nerves of the opposite side. By killing animals at the proper period, it has been ascertained that after inoculation in the tail or posterior extremities the virus makes its appearance in the posterior part of the spinal cord sooner than in the medulla oblongata, while the reverse holds true when the inoculation is made in the head or posterior part of the body. These observations, taken together with the inefficiency of intravenous injections, and the absence of the

virus from the blood, lead to the conclusion that the virus passes along the nerve trunks, although we have no information as to how this is accomplished.

It is a significant fact, which should be remembered in judging the results of Pasteur's treatment, that there is a period of so-called latent development of the virus in the central nervous system. In rabbits inoculated with the strongest virus (*virus fixe*), the period of incubation is six days, but as early as the fourth day the virus has been found in the medulla oblongata. Doubtless, therefore, in human beings, the virus is present for a longer or shorter period in the central nervous system before any characteristic symptoms of rabies appear. Careful observation has shown that in rabbits this period is not really a latent one, but it is accompanied by elevation of temperature, increased frequency of respiration, slowing of the pulse-rate and loss of weight.

Dr. Welch said that there can no longer be any question that it is possible to render animals immune against rabies both before and after inoculations which would otherwise cause the disease. The independent and careful experiments of Ernst in this country are free from all partisan bias and have amply confirmed the statements of Pasteur on this point. The methods employed by Pasteur for protective inoculation against hydrophobia have been so often and so fully described in medical and other journals that Dr. Welch did not consider it necessary to repeat the description on this occasion. These inoculations are most effective in preventing the disease when undertaken soon after the reception of the poison with a large quantity of virus, and with the speedy employment of material containing the strongest virus (*virus fixe*). Animals may be rendered immune by single injections into the blood or the subcutaneous tissue of a large quantity of strong virus, whereas dogs which are bitten by mad dogs and which do not develop the disease, as often happens, are not left immune. Dogs which have once been rendered immune against rabies may preserve this immunity for at least two years, and doubtless for a longer period.

Pasteur attributes the immunity to the action of some substance which he calls "*matière vaccinale*," contained in the virulent material but not identical with the microorganism causing rabies. That immunity against infectious disease may be secured by the injection of chemical substances produced by the growth of specific bacteria, was first demonstrated by Salmon and Smith in the case of hog cholera, and has been subsequently demonstrated by Roux and Chamberland for malignant œdema and by Wooldridge for anthrax. It has not yet been found possible to prove conclusively the correctness of Pasteur's supposition in the case of rabies, but there is much which speaks in its favor.

Encouraged by the results of his experiments upon animals, Pasteur, in July, 1885, first applied to a human being his method of preventing hydrophobia by successive inoculations of the virus contained in the rabbit's medulla subjected to drying for different periods. During the years 1886, 1887 and the first half of 1888 there have been treated under Pasteur's supervision, either by the simple or by the intensive method of inoculation, 5,374 persons who have been bitten by animals either proven or suspected to be rabid. The mortality from hydrophobia, including even the cases which developed within a day after the cessation of treatment, was, in 1886, 1.34 per cent.; in 1887, 1.12 per cent.; in 1888, .77 per cent. If the fatal cases which developed within a fortnight after the end of treatment, and in which there is reason to believe that the inception of treatment was too late, be excluded, the mortality for 1886 falls to 0.93 per cent.; for 1887 to 0.67 per cent.; and for 1888 to 0.55 per cent.

Dr. Welch considered the various objections which have been made to Pasteur's method and to the value of his statistics. Some of these objections are of a purely hypothetical nature. Much force has been attached to von Frisch's experiments, which seemed to some to invalidate the scientific basis of Pasteur's method of treatment. Von Frisch claimed that it is impossible to render animals immune after the reception of the virus of rabies in a manner certain to produce the disease. In opposition to von Frisch it has been demonstrated by Pasteur and others that, in a large proportion of cases, the development of rabies may be prevented in dogs which have been inoculated beneath the dura mater with the strongest virus. The treatment, however, must not be deferred under these circumstances later than the second day, and must be by the intensive vaccinations. Bardach succeeded in this way in saving 60 per cent. of the dogs inoculated beneath the dura mater. This test is evidently the most severe one to which Pasteur's preventive treatment can be subjected, one far more severe than is required to meet the ordinary channels of infection with rabies. It must be admitted, therefore, that Pasteur's treatment rests upon a satisfactory experimental basis.

The criticisms raised against drawing favorable conclusions from the large mass of statistics published by Pasteur have been many, but the most important are that we are ignorant of the mortality following the bites of rabid animals, and that there are included in Pasteur's statistics an indeterminate number of persons bitten by animals not rabid. As regards the first point, there are various careful collections of statistics which show an average mortality of about 15 per cent. (Lablanc, Dujardin-Beaumetz, Horsley). All admit that bites by rabid animals on the head and face furnish a much higher mortality than this; it

being given as 88 per cent. by Brouardel. To meet the second criticism, Pasteur's statistics, which are published monthly, are arranged in tables which embrace: *a*, persons bitten by animals proven experimentally to be rabid; *b*, cases in which the existence of rabies is certified by a veterinarian; *c*, cases in which there is reason to suspect rabies in the animal. Pasteur's statistics for class A, that is for persons bitten by animals proven experimentally to be rabid, for the years 1886, 1887 and the first half of 1888, yield a mortality from rabies of 1.36 per cent.; or, if those who died within a fortnight after treatment be excluded, of 1.09 per cent.

Dr. Welch collected from Pasteur's reports for the first half of 1888 those bitten on the head and face by animals proven experimentally to be rabid. There were 59 cases, with 4 deaths from rabies during treatment and 2 following treatment. Of the latter 1 was seized three days after the cessation of treatment, and it is reasonable to suppose that in this case the treatment was begun too late. If this case and those dying during treatment be excluded, there remain 54 cases with 1 death, a mortality of 1.85 per cent.

In view of the universally conceded high death rate following bites on the head and face by rabid animals, this result leaves no room for doubt as to the efficiency of Pasteur's treatment, although it is not unfailing.

It is a sufficient answer to the assertion that has been made that Pasteur's intensive inoculations are dangerous in that they may actually produce the disease, that the mortality from rabies is strikingly smaller after the application of the intensive method than after the simple treatment.

SUCCESSFUL CASE OF NEPHRORRAPHY FOR FLOATING KIDNEY.

Read before the Philadelphia County Medical Society, March 27, 1887

BY W. W. KEEN, M.D.,

PROFESSOR OF SURGERY IN THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.

Miss E. J. F., of Sunbury, Pa., æt. 35, height four feet eleven inches, weight ninety-two pounds, was sent to the Woman's Hospital on October 4, 1888, by Dr. Mary A. McCay, with a diagnosis of floating kidney. For the following notes I am indebted to Dr. Chapin and Dr. McKee, resident physicians. The patient was delicate as a child; menstruation began at 15, and was always painful and irregular. At 18 years of age she was thrown from a wagon, falling forward with considerable force on her chest and abdomen. Shortly after the fall she suffered with severe pain in the right side and a great deal of distress across the back. Menstruation ceased for six months, and was followed by dropsy and severe illness. There was frequent inclination to vomit,

and a great deal of palpitation of the heart. In spite of constant medical attention, she dragged out a miserable existence. About seven years after the fall she noticed a movable tumor in the abdomen, which Dr. McCay believed to be a floating kidney.

Present condition.—Appetite and sleep poor; urine 1020, slightly alkaline, twenty-nine ounces in twenty-four hours, no albumen, no sugar. Heart and lungs normal; uterus retroflexed. In the right abdomen was a tumor, about the size of the kidney, which could be freely and easily pushed two or three inches to the left of the middle line back into the right lumbar region, or down into the right iliac fossa. Neither the hilum nor the blood-vessels could be distinctly made out. Percussion over the position of the right kidney showed a tympanitic note, the left renal dulness being distinct and normal. The tumor was evidently not connected with the uterus, ovary, or liver.

Operation, October 26, 1888.—Ether was administered. An oblique incision was made at the outer border of the quadratus lumborum four inches long. As soon as the abdominal fat was discovered, search was made for the kidney. The colon was first found, but the kidney was absent from its normal position. Strong pressure being made on the abdominal tumor, it was partly pushed back into position, but could even then only be touched by the finger tip. On separating the borders of the incision by retractors, it was seen to be the kidney, bare of all fat. In order to replace it entirely, it had to be seized by a volsella. Seven carbolized silk sutures were next introduced by a Hagedorn needle, four posteriorly and three anteriorly, through the capsule and substance of the kidney, by which it was attached to the muscles and aponeurosis of the abdominal wall. Seven deep sutures of chromicized catgut were then introduced through the entire muscular wall of the loin, but they were not tied, as I intended that the wound should remain open for a few days, if not permanently, in order to produce cicatricial tissue between the kidney and the muscular wall. No provision for drainage was necessary of course. The wound was covered with an ample bichloride gauze dressing. Her recovery was entirely uneventful. Her highest temperature was 100.9°. The urine was entirely free from any blood, though the bladder was irritable, and the catheter had to be used for several days. The wound was so completely filled up within the first forty-eight hours, that I removed the stitches that had been passed through the muscular wall. I kept her flat on her back for four weeks, when she was allowed to rise for a short time. There was considerable, apparently rheumatic, pain in the small of the back for three or four weeks after the operation, which disappeared and again reappeared,

and which seemed to be benefited by salol. Seven weeks after the operation there was a moderate amount of albumin in the urine, which disappeared after the use of Basham's mixture for three weeks. Soon after she got out of bed, I tried the effect of a pad to support the kidney in front, but its use caused so much discomfort that I abandoned it, trusting wholly to the silk sutures and cicatricial tissue to hold the kidney in place. The tumor formerly discovered in the abdomen was entirely gone, and the normal renal dulness reestablished, though a little lower down. She went home on the 5th of January, 1889. I heard from her to-day, March 16, 1889, and she says: "My back is still weak, but the pain is fast disappearing. The kidney is still firmly anchored, and I am feeling better generally. Words cannot express my gratitude to you for what you have done for me."

REMARKS. *First, the cause.*—A lax abdomen following frequent pregnancies has been supposed to be the origin of floating kidney, as it is of floating liver. In the case here narrated, the patient was unmarried, and the abdominal wall was not at all lax. Again, the absorption of the perinephritic fat has also been supposed to be a cause, but in this case as soon as the abdominal wall was penetrated, the perinephritic fat was at once encountered. But it was a noticeable fact that the kidney itself was entirely free from any fat. In other words, the fatty bed in which the kidney should lie was in its proper place, but the kidney was displaced and there was no fat on the kidney itself. It seems reasonable to conclude that the dislocation of the kidney was due to the fall at the age of 18, though the abdominal tumor was not discovered till seven years later. Landau, who has written the best monograph both upon floating kidney and floating liver, states that of 314 cases of floating kidney, 273 were in women as against 41 in men. In 178 cases, it existed on the right side in 151, on the left in 13, and in 14 on both sides. The present case being in a woman, and upon the right side, emphasizes still further his statistics.

Secondly, the symptoms.—Digestive disturbances, especially constipation and very fetid breath, were not marked, though they were present to a moderate degree. The chief trouble was pain and constant discomfort, which was not only physical, but mental, the very existence of the tumor being a source of constant worry. The tumor itself was not especially tender to the touch, but it created a constant aching pain. Neither the hilum nor the pulsating renal artery could be distinctly made out, but the character of the tumor and the altered renal dulness made the diagnosis quite clear.

Thirdly, the treatment.—Recumbency alone has been advised by Landau, but this seems to me altogether too expectant. Only the most sanguine

could believe that by this treatment, if such it can be called, a kidney would resume its normal position and quietly continue there sufficiently long for the adhesions to be reëstablished with any prospect of permanency.

I did not try any treatment by pad or bandage, as the patient was from a distance and could not remain the long time necessary to decide whether such palliative treatment would answer. On the other hand, extirpation of the organ was equally foreign from my thoughts. In my opinion, this should only be done after failure of an attempt at fixation. The danger to life of a floating kidney is absolutely *nil*. It is, therefore, only to remedy the discomfort that exists that we operate. Hence, I do not think extirpation at all justifiable unless we first attempt to fix it *in situ*, and having so failed, it is only justifiable even then in case the discomfort is very great. Dr. Maurice H. Richardson (*Boston Medical and Surgical Journal*, June 14, 1888), who has published an excellent paper with a full bibliography, quotes from Brodeur the following figures: Of 235 nephrectomies, 125 were done by lumbar incision, with 47 deaths (37.6 per cent.), 110 by abdominal incision, with 55 deaths (50 per cent.). As against this large mortality from nephrectomy, however, Gross has collected 17 cases of nephrorraphy, with only one death, a mortality of only 6 per cent. It should be added also, that in the fatal case (Ceccherelli, *Centralbl. für Chir.*, 1884, 44, 743) the surgeon passed the stitches around the twelfth rib, a procedure which is absolutely needless as well as dangerous.

Hahn (*Centralbl. f. Chir.*, 1881, p. 449) first proposed fixation for a floating kidney, by operative procedure, and practically perfected the operation. The operation is simple. The patient being laid upon the side, an oblique incision is made at the outer border of the quadratus lumborum. The edge of this muscle being recognized, the perinephritic fat is found immediately in front of it, at its outer border. This fat having been cut or torn through, the kidney may be seen at once, but, if it is very movable, it may be so far displaced as not to be seen, or, as in the present case, may be even felt with difficulty by the tip of the finger, even when an assistant pressed it firmly back through the abdominal wall.

Mr. H. Morris (*Surgical Diseases of the Kidney*, p. 45) makes a distinction between a kidney which has no mesonephron, but moves about freely behind the peritoneum, this being called "movable kidney," and a "floating kidney" which does possess a mesonephron, and therefore floats freely in the peritoneal cavity. In cases, therefore, of a strictly floating kidney, it would be necessary to open the peritoneal cavity before it could be fixed in the loin. This distinction is confirmed by the four cases of dissection to which

Morris refers. Comparing them with the present one, the range of movement to the left of the umbilicus and into the right iliac fossa was so great in this case, that it would seem proper to call it a "floating kidney," yet, at the operation, no renal mesentery or mesonephron was found. The probable mode of its production would also militate against the existence of any mesonephron. The kidney was far away from its normal position, but when pushed back into its proper place no layer of the peritoneum could be found that by any possibility could be called a mesonephron, and the peritoneum was certainly not opened.

In spite of the fact that Paoli (*Centralbl. f. Chir.*, 1885, 51, 910) cut through the twelfth rib in order to obtain room, it would seem to be rarely necessary to do so. When found and pressed back, the kidney should be fixed as nearly as possible in its normal position. Usually it will be impossible to replace it as high as it was at first, but lowering the site by two inches is not uncommon and seems to be of no importance.

The sutures that have been employed (either of silk or of catgut, disinfected, of course) may be passed (1) through the capsule of the kidney, or (2) through the parenchyma and capsule both, and may either be (3) left permanently or (4) removed. In this case I employed antiseptic silk, which I consider decidedly the best, and passed the stitches not only through the capsule, but through the parenchyma of the organ itself, three on the anterior surface and four on the posterior, stitching the kidney to the muscles, and what I consider more important, to the aponeurosis, which exists on each side of the incision. Finally, these stitches were not removed, but were left *in situ*. I believe with Svensson (*Centralbl. f. Chir.*, 1886, 824), that many failures have been due to employing absorbable catgut, to the avoidance of passing the stitches through the substance of the kidney, and to removal of the stitches, which in all cases I think should be left in, whatever the material employed. Svensson inserted as many as fourteen silk stitches, which were left in place and caused no trouble. The wound is best left to heal by granulation. I introduced a number of stitches to close the abdominal wall if necessary, but in twenty-four hours it was so filled up that it was evidently a needless precaution. The larger amount of cicatricial tissue that is produced by leaving the wound to heal by granulation probably fixes the kidney more firmly.

Another very important point is, that the patient should lie flat on the back for at least a month after the operation, in order that the cicatricial tissue binding it in place may become thoroughly developed and firmly established. Even then, I would advise some support for the kidney in front by a pad or bandage, provided

the patient bears it well. In this case I soon abandoned it, as it caused too much discomfort. It is to be noticed that though the stitches were passed through the kidney substance, the patient had no hæmaturia (this was carefully watched for) and that no inflammation or reaction seemed to follow. But seven weeks after the operation considerable pain developed in the region of the kidney together with some albuminuria. This disappeared, however, after the use of Basham's mixture. The pain seemed to be rheumatic, and was soon relieved by the administration of salol.

A CASE OF NEPHROTOMY.

Read before the Philadelphia County Medical Society, March 27, 1889.

BY L. W. STEINBACH, M.D.,
OF PHILADELPHIA.

On July 17, 1888, Mrs. Anna H., 44 years old, from New Jersey, was sent by her attending physician to my department at the Polyclinic with a statement that she had been under his care for about a month, that she presented symptoms of hepatic and gastric disorders which brought about anæmia, nervousness and irritability of the heart. She complained of indigestion, frequent vomiting of food or of mucus, attacks of palpitation of the heart, and loss of flesh. One week ago his attention was directed to an induration in the right hypochondriac region, and, deeming it of serious import, he referred the patient to our clinic.

From her own statements and those of accompanying friends we gathered, in addition to the above, the following history :

Mrs. H. was formerly a hard working country woman, who bore six healthy children, but had had no miscarriages. She suffered in several of her confinements with puerperal mania, but considered herself in good health until eleven years ago, when, she thought, she became dyspeptic. Five years ago she noticed a lump in her abdomen, of which she made no mention to anyone until one month ago, up to which time she was able to attend to her household duties. She complains of headaches and constipation, and has not noticed any sediment in or discoloration of the urine, nor could she recall having suffered with pain that would indicate the passage of a biliary or renal calculus. Her pulse, respiration and temperature are normal, she looks anæmic, the complexion is muddy, her conversation and behavior indicate the existence of some mental weakness, the body is emaciated. Inspection shows a prominence in the right lumbar region, whilst percussion and palpitation reveal the presence of a tumor extending from the lower border of the ribs vertically for about seven inches, and, laterally, occupying the centre of the lumbar region to the extent of three inches. The percus-

sion dulness is continuous with that of the right lobe of the liver. The tumor is freely moveable below, and felt through the abdominal walls imparts the sensation of a bag filled with small pebbles. Believing that the case before me was one of a gall-bladder filled with calculi, and fearing lest manipulation would cause rupture of the cyst, I desisted from further palpation and directed my inquiries toward finding other symptoms of biliary obstruction. I drew off the urine with a catheter and submitted it to a chemical analysis, which showed the absence of albumen and the presence of some bile-pigment. No particulars of the nature of the stools could be obtained. In a letter directed to her physician, I gave it as my opinion that the patient was suffering from the effects of an enormously distended gall-bladder filled with calculi, and recommended a cholecystotomy.

One week later, she returned with the consent of her physician ready to undergo the proposed operation. After a preparatory treatment by baths, a laxative and rest in bed for two days, and after a consultation with my assistants and the physicians composing my class, in which the existing symptoms, and especially the absence of pronounced jaundice, were separately and carefully considered, I believe there was no more reserve in the minds of these gentlemen than in my own that the former diagnosis was the correct one. Dr. Keen also hastily examined the patient, concurred in the diagnosis and lent his kind assistance in the operation.

On July 26, the patient being anæsthetized with ether, an incision three inches in length was made in the right linea semilunaris, over the most prominent portion of the tumor, beginning at the border of the ribs and dividing the abdominal muscles and peritoneum ; the apex of the tumor was reached without encountering any of the abdominal viscera. The calculi could now necessarily be felt more distinctly than before the division of the abdominal wall, and, meeting with difficulty to place the tumor on the trough-shaped apparatus devised by Dr. Keen, it was decided to pick up a fold of the cyst between two pairs of hæmostatic forceps and make an incision between the forceps, so that the calculi might be removed without permitting the escape of bile or mucus into the peritoneal cavity ; this was accordingly done, and a few pieces of calculus removed, which, however, did not correspond in shape, color and general appearance to calculi of biliary origin, especially when the forceps grasped a stone evidently of large size and immovably fixed.

The idea of impacted gallstones was dispelled by the appearance of these calculi, and the thought that flashed upon the mind of every one was, that the tumor was a kidney.

The fear of rupturing the normal gall-bladder

having suddenly vanished, the lips of the abdominal incision were drawn apart more freely, which brought to view the margin of the right lobe of the liver and a normal gall-bladder in its normal position.

Further examination showed the tumor to be the right kidney distended by several calculi of different shapes and sizes. The organ itself was twisted by being turned upon its vertical axis from behind forward and to the left, and upon its horizontal axis from above downward and from behind forward, so that the dorsal surface and the upper end presented at the anterior abdominal wall.

It was now at once decided to remove the kidney, a superficial examination indicating the existence of a kidney on the left side. The pedicle of the tumor, consisting of ureter, artery and vein, was ligated *en masse* with a silk cord, the kidney cut off, the abdominal incision closed with sutures and dressed. The patient was put to bed, and after half an hour came out from under the influence of the anæsthetic and inquired of the nurse about the particulars of the operation. She gave no evidence of pain or suffering, and assumed her usual air of indifference to her surroundings which, according to the statement of her niece, was her peculiarity. Three hours after the operation the bladder was catheterized, but no urine obtained. Catheterization was repeated at intervals of six hours during the two succeeding days with a like result. The temperature at 8 o'clock P. M., six hours after the operation, was 101° F., falling to 99° on the following morning, gradually rising to 103° towards evening, and falling in the same manner to 100° on the morning of July 28. She slept for a few hours during the night after the operation, and after a small dose of morphia; took moderate amounts of nourishment and some stimulants. About noon of the third day began to complain of soreness all over the body, became irritable and restless, but continued to take milk and whisky. She passed no urine up to the time of her death, which occurred at 6:20 P.M., fifty-four hours after the operation, caused by suppression of urine. A post-mortem examination was not held.

The removed kidney with the calculi weighed fourteen and a half ounces, and is among the pathological specimens which Dr. Keen presents this evening.

In submitting the case for discussion and criticism of the society, without explanations in justification of the course of which I have pursued, I am adding one to the great number of recorded and unrecorded cases of movable kidney, the removal of which has been attempted or accomplished in the belief that the tumor was ovarian, uterine, splenic, or belonging to any of the abdominal or pelvic organs.

A CASE OF LAPAROTOMY FOR EXTRA-UTERINE PREGNANCY.

*A Paper read at the Allegheny County Medical Society,
March 19, 1889.*

BY X. O. WERDER, M.D.,
OF PITTSBURGH, PA.

At the November meeting of this Society I reported a case of extra-uterine pregnancy in which I had performed abdominal section with a successful result. To-day I present the specimen of my second case of tubal pregnancy, removed by laparotomy, on February 14th, of this year.

The history of this case is, briefly, as follows:

Mrs. M., 27 years of age, married, two children, the youngest 16 months old, has been suffering with periodical attacks of severe abdominal pains for almost a year, for which she several times required medical treatment. During the five or six weeks preceding the operation these attacks increased in frequency and severity, making her unfit to do her ordinary household duties. Walking almost always produced a great deal of suffering. On January 26th, of this year, I was consulted for one of these attacks of pain, which was referred to the pelvic region, principally the left side. Making a vaginal examination, I found the uterus enlarged to the size almost of a two months' pregnancy, and to the left of this, in the region of the left tube, a soft, extremely tender mass, which was slightly movable. A careful bimanual examination could not be made on account of the very great sensitiveness of these parts. She had menstruated regularly every four weeks during the last eight or nine months, and was at this time still nursing her baby. At the two subsequent examinations I found no change in her condition, except, perhaps, that this tumor was slightly larger than before. The diagnosis was not quite clear, but I was inclined to the opinion that it was either a hydrosalpinx, or a pyosalpinx, more probably the latter. As her suffering at times had almost become unbearable, I advised laparotomy, to which she readily consented, but the operation was deferred until after her next menstrual period, which was now very close at hand. Menses lasted five days, and presented nothing unusual. In the afternoon of the 13th of February, the day preceding the operation, she came to my office in a carriage, from her home, for the purpose of going to Mercy Hospital. On examination I found her condition unchanged; the mass, however, seemed now decidedly larger. The riding on the rough country road from her home did not seem to have caused her as much suffering as expected, and she was cheerful and feeling better than for several days previously. But on her way to the hospital the pains returned in unusual severity, and she arrived there faint and nearly collapsed. Several hypodermic injections of morphia made

her more comfortable, but she continued very sick and sore all night. On my morning visit, before the operation, she looked very pale, and was very feeble, still suffering considerable pain. Vaginal examination was not made.

On opening the peritoneal cavity dark blood escaped from the wound, and the abdomen was found containing a considerable quantity of blood, liquid and coagulated. In reaching down for the sac, on the left of the uterus, I felt a small rent in it, probably $\frac{1}{2}$ inch long, which, however, in trying to bring it to the surface, was enlarged, so that all its contents escaped into the abdominal cavity. The bleeding was now very free, the blood being bright red, and easily distinguishable from the old dark blood already contained in the abdomen. The sac was now tied off, and the clots contained within the pelvic cavity turned out. After washing out the abdomen with hot distilled water it was closed, leaving, however, a glass drainage tube. Blood continued to discharge from this tube for three days, when it was removed.

The patient rallied very nicely from the operation, and made an uninterrupted recovery, her temperature and pulse remaining perfectly normal after the fourth day. She left the hospital on the 21st day, and is now in good health.

Rupture of the tube must have taken place on her way to or at the hospital, probably as a consequence of the jolting of the carriage. This evidently was the cause of the faintness and slight collapse after her arrival at the hospital the evening before the operation.

Comparing the histories of the two cases operated on by me, we find the first case an almost typical one of ectopic pregnancy, and one of comparatively easy diagnosis to one at all familiar with this interesting anomaly, while the second case is as atypical as possible, in which I claim a diagnosis to have been entirely impossible, for there was not the slightest reason to even suspect a pregnancy, as the patient had been menstruating regularly, her last catamenial period terminating just a few days before the operation, and she was still nursing her baby at the time she came under observation.

This case illustrates again the great difficulties in diagnosing extra-uterine pregnancy, and I cannot agree with Hanks, when he states that the diagnosis can be made in at least 95 per cent. of cases. The case also demonstrates that this interesting affection is by no means such a very rare condition as some seem to suppose, as this is the second case occurring in my own practice within the period of four months. That this was a case of tubal pregnancy there could be very little doubt, but in order to be perfectly certain I sent the specimen to Dr. Wm. H. Welch, of Johns Hopkins University, Baltimore, for examination, and he verified the diagnosis. The specimen, he

states, consists of an ovary, part of a Fallopian tube, the intervening broad ligament, the fetal membrane and a placenta with umbilical cord.

REPORTS FROM HOSPITALS.

SURGICAL CLINICS AT THE WESTERN PENNSYLVANIA HOSPITAL BEFORE THE STUDENTS OF THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

BY PROFESSOR J. B. MURDOCH,

SURGEON TO THE WESTERN PENNSYLVANIA HOSPITAL AND PROFESSOR OF CLINICAL SURGERY IN THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

[Reported by WILL. N. PRINGLE, M.D., a member of the Graduating Class.]

November 24, 1888.

As we are now studying the subject of fractures I embrace every opportunity to illustrate the different fractures of the bones of the human body to you.

FRACTURE OF THE LEFT LEG AND RIGHT THIGH.

The man we show you now is a railroad employé; yesterday while standing on a carload of gravel that was being pushed ahead of the engine, he suddenly became aware that the car was off the track; he signaled the engineer and endeavored to get the train stopped, but before he could do so the car went over an embankment, throwing him and the dirt down the hill. Just before going over the bank, however, he jumped, alighting on his toes, he says. He has sustained a fracture of the left leg and right thigh, and has a wound over the right patella. Whether he received these injuries from jumping, or from being thrown, he does not know; they were at all events probably caused by indirect violence. As he lies before you the first thing you will notice is that his right leg is everted. You also see some swelling. By measuring I find a little shortening of the right leg. He is unable to raise his heel from the table, and as I manipulate the limb I find a false point of motion about the middle of the thigh, so we have nearly all the symptoms of fracture of femur in history of the accident, deformity, swelling, pain, loss of function, false point of motion, but we have no crepitus. This is absent, possibly because the ends of the bone have overlapped or slipped past each other. This is often the case. We have abundant symptoms, however, on which to base a diagnosis of fracture, even if we do not elicit crepitus. We have made strong extension, but failed to bring the two ends together, but for all that it does not follow that they cannot be brought together, for although we may have ap-

plied extension to the amount of a hundred pounds and failed, still by *continuous application* of only eight or ten pounds for thirty-six or forty-eight hours, we may bring these fractured extremities into exact apposition. We do not, however, as a general thing, in a man of this age, expect so good a result as we would in a child, but are usually satisfied if we get strong union with a little shortening. This right leg was dressed with weight and pulley, and Hamilton's splint, which extends from the axilla to the sole of the foot, with a small piece extending out at right angles about six inches from the side of the splint; this is to prevent eversion, or rolling out, or rotatory deformity of the limb. By a bandage around the upper end of the splint and around the body of the patient he is prevented from rising, thus securing quiet and rest. The left leg you see is also broken below the knee, and by the amount of motion we know that both bones are broken. Here, too, we are able to secure almost all of the symptoms of fracture, including crepitus. Shortening, however, is absent, but when both limbs are fractured we have no fixed point from which to calculate, hence shortening becomes of no value as a symptom in this form of fracture. Over the spine of the tibia you see quite a large bleb. Where you find these you must expect to find a low state of vitality and an impaired nutrition; and you must be very careful about applying tight dressings or bandages, or you will surely have gangrene in the extremity of the limb. A question might arise in regard to the treatment of these blebs. Some surgeons recommend that they be opened at once. I never open them. I think that the cuticle heals better under the epidermis than it would do if it were opened and evacuated. My usual mode of treating fractures of this kind will be practiced in this case. The leg will be kept in the fracture box for a week or ten days, and then a plaster dressing put on.

A COMPOUND FRACTURE.

I will next show you the compound fracture which you saw us dress two weeks ago. We have failed to get these fragments to unite, and have been unable to bring them into apposition; there is either a tendon, muscle or piece of bone in the wound preventing union. I propose, to-day, to cut down on these fragments and saw off the ends of the broken fragments, bring them into close apposition and wire them together. Then by diet, regimen and good constitutional treatment generally, we hope to get union and repair here. You see the bone protruding through the skin, and entirely denuded of periosteum; this I will saw off. I have tried so often to impress upon you the dangers from compound fractures as compared with simple fractures, that I say now, that if you are ever able, by the use of lint

soaked in compound tincture of benzoin, collodion or in the patient's blood, to convert a compound into a simple fracture, you have saved your patient much suffering and loss of time, and perhaps his life. But you will often meet with cases like this where you will have trouble in doing this, and you will also meet with other cases in which you will fail entirely.

In all operations on bones I think it a good plan to use an Esmarch bandage. I think it is more useful to the surgeon in these cases even than it is in amputations, but in compound fractures and in injuries where the vitality is low I never like to use it. I am always afraid to do anything that might interfere with the blood vessels leading to the part, and for that reason I would rather lose a little blood than to risk injury to the already devitalized vessels that must carry the material for the repair of the wound. By removing the fractured ends of this tibia I have been able to bring them into apposition, and now, for fear of having bowing of the limb, I will saw out a short section from the fibula. The limb will now be dressed in the usual way, and we will hope for the best for this man, although his limb is by no means yet saved.

December 1, 1888.

FRACTURE OF THE VERTEBRÆ.

The first case I will bring before you to-day is one of those cases of which we see too many in this hospital every year, namely, fracture of one or more of the vertebræ. These cases are, in my mind, the most melancholy of all the cases we have to witness, and they appeal to the sympathy of every man of any feeling at all. If they were crushed and killed outright they would not, it seems to me, present half so sad a picture as they do in cases like this, with the lower part of the body practically dead and the upper part alive and well. They lie on their back, usually, until large bed sores form on their body and they die of exhaustion. This man was a coal miner, and while at his work in the mine, two or three weeks ago, a quantity of slate fell on him, crushing him to the ground and fracturing the vertebræ in the lower dorsal or upper lumbar region. This is the manner in which a great many of these injuries happen. This man also received at the same time a fracture of both bones of the leg three inches below the knee. These injuries of the spinal cord are somewhat allied to injuries of the brain, in so far as paralysis is concerned, although we do not have loss of consciousness, delirium and many of the other symptoms of compression of the brain. He has complete paralysis in his lower extremities, with incontinence of urine and fæces. In cases of this kind there is usually, for the first day or two, retention, followed by incontinence of urine. This was the case in this man. He has all the power in his

upper extremities he has ever had, he can roll his head about, flourish his hands and arms in the air, and almost raise himself to the sitting posture, but he is as powerless to raise a foot from the bed as though his two legs were separated from his body. He is also unable to feel me pinch his legs or prick him with a pin. He has paralysis of both motion and sensation. As we turn the man over you see two large bed sores almost covering his entire buttocks, which have formed in the short space of three weeks. When you have a patient that you know must lie in bed for a long time, much benefit may be derived from washing the parts with alcohol every day. Some recommend alum water. This may be done before the ulcers form, but after the ulcers have formed the best thing you can do is to cover them with moleskin plasters or chamois leather, which may be spread with Peruvian balsam.

Now, while these kind of cases almost invariably die, there are exceptions to the rule. There was a man in the wards here about a year ago with just such a fracture as this, except that the deformity was more marked, and he had neither paralysis of motion or sensation, and in three weeks we put a plaster jacket on him and he soon after left the hospital alive and well. The only explanation in this case was that, although there was considerable deformity, it was not in the direction to make pressure on the cord. There are various treatments for these fractures, one of which is by extension and counter-extension, and this I think would have been good treatment in this man's case had it been resorted to early enough. Another mode of treatment is that of cutting down on the vertebræ and elevating the fractured portions, much the same as you would trephine the skull for pressure on the brain.

TREATMENT OF COLD ABSCESSSES.

We have another case to show you to-day, a man with two swellings on his back. His family history is of the best. About one year ago he received a blow on his back over the site of the upper swelling, and eight months ago he had pneumonia, for which his physician painted his back with some substance, after which these swellings appeared. He had them aspirated and a pint of pus withdrawn. After this they again filled up, and I can now readily detect fluctuation, and as I press firmly on the upper swelling the fluid is all pressed out and distends the lower tumor, and I can then press it from the lower back into the upper tumor, so you see they communicate with each other. This is known as a cold abscess, and the contents of a cold abscess differ somewhat from the contents of an acute abscess, that from the latter being thicker in consistency, or creamy and more like normal pus, while that from the chronic form is more fluid or liquefied. In children this matter is likely to form near the

vertebral column, and following the course of the psoas muscle point in the groin. A very superior manner of treatment of cold abscess, in my mind, is that invented by a German surgeon, namely, to evacuate the abscess thoroughly, by means of the aspirator or trocar and canula, then inject into it an ethereal solution of iodoform. The ether evaporates, or diffuses, through the cavity, carrying the iodoform into every pocket, sinus and crevice in the cavity, thus acting as a most thorough antiseptic. This is the treatment I propose to give this case. In passing the trocar I select the most dependent point, because it is here that I am most certain to empty the cavity most thoroughly. This is a good rule to which there are many exceptions, however. In many abscesses you would have to go through a great mass of tissue, in order to open it at the lowest point. In these cases I would advise you to open at the thinnest point, or at the point where nature would, unaided, have made an opening. I will inject two ounces of the ethereal solution of iodoform into this cavity. It will then be left undisturbed for a few days, unless the temperature goes up, or other indications present themselves, showing that all is not doing well. If the temperature goes above 100° I will at once open the entire cavity freely, scrape it out with a Volkman spoon and drain it thoroughly, and treat it as an acute abscess.

MEDICAL PROGRESS.

DIFFUSE CALCIFICATION OF THE LIVER.—At the meeting of the Pathological Society of London on April 16, MR. TARGETT showed a specimen of diffuse calcification of the liver, which was removed from a man æt. 62, who died in the Exeter Hospital. It was presented to Guy's Hospital Museum by Dr. Davy. There had been a tumor in the epigastric region for seventeen years, which was very hard but not tender, and did not interfere with his work as a farm laborer. Four months before death he developed an empyema on the right side, for which he was treated in the hospital. At that time the abdomen presented a swelling of stony hardness in the epigastric region, which moved with respiration, and appeared connected with the liver. There was no ascites, but the veins over the upper part of the abdomen and the lower part of the chest were enlarged and varicose. There was no jaundice until two days before death, which resulted from facial erysipelas. The clinical report was very incomplete, and the condition of urine was not mentioned; but at the post-mortem examination the kidneys looked normal, though much enlarged. The spleen was

four or five times its usual size. The liver was firmly adherent to all the surrounding parts; after removal it weighed 66 ozs. The left lobe was very much enlarged, and was the cause of the epigastric swelling. The capsule was much thickened, and the substance of the liver so hard that it had to be sawn into sections. The greater portion of the organ was then found to be replaced by fibrous tissue, which was infiltrated with calcareous deposits, composed of carbonate and phosphate of lime and a large proportion of organic matter, but did not contain cholesterin or bile acids. Microscopic examination of the least affected parts of the liver showed changes like those of monolobular cirrhosis, and there were many groups of small round cells in the strands of fibrous tissue. One striking point was the amount of new tissue in the centre of the lobules spreading out between the rows of liver cells. The other parts of the liver were decalcified and examined, but they showed little more than fibroid tissue. There was no caseation; no gummata or evidence of parasites could be found. He considered that the thickening of the capsule, together with the amount of fibrous tissue in the interior of the organ, were suggestive of the primary change being syphilitic, but there was none of the cicatricial contraction so commonly found in old syphilitic livers. The clinical history did not mention syphilis or alcoholism. The specimen was referred to the Morbid Growths Committee. — *The Lancet*, April 20, 1889.

INTRACELLULAR DIGESTION.—(*Annales de l'Institut Pasteur*, 1889, No. 1.) As most protozoa and phagocytes, because of their smallness, are not well adapted for a microscopical observation of the course of intracellular digestion, Metschnikoff made his observations first on myxomycetæ. The amœboid character of these organisms, their ability to receive carmine-granules, spores, etc., has already been proven by de Bary. The existence of a pepsin-like ferment in *æthaliu septicum* has been established by Krakenberg, and later on by Reinke and Greenwood. To be sure, it seems to be effective only in acid solutions, and for that reason—according to the two last-named authors—is of no benefit to the myxomycetæ themselves. Further difficulties in observing the myxomycetæ exists because of the constant movements of their protoplasm, and because sometimes the granules already taken up are thrown out again, etc. Nevertheless Metschnikoff succeeded in observing in plasmodium physarum a paling and all stages of solution of cells from the red sclerotium (of *phlebeomorpha rufa*). The granules of blue litmus powder intermingled with various plasmodii were not only taken up by the latter, but showed also, after a certain time, a decided rose coloring. If a volatile alkali was added or pressure with the cover-glass was made, the blue color of the litmus-

granules reappeared. Many of these granules were enclosed in smaller or larger vacuoli filled with a reddish, clear fluid; others seemed to be directly surrounded by the protoplasm.

Metschnikoff infers from these observations that the plasmodium of the myxomycetæ, although having an alkaline reaction, can produce an acidulous juice with a pepsin-like property to digest albuminous substances. Moreover, Metschnikoff convinced himself that digestion in acid media is not limited to myxomycetæ among lower organisms. The vacuoli fluid of *stylochnia* has a decidedly acid reaction on litmus; as has also that of *vorticella convallaria*, and Le Dantec recently established the same fact for the nutritive vacuoli of *stentor polymorphus*. There are also instances of digestive juices having neutral reaction in lower organisms; the author mentions several of these. But the main fact is this: that, in general, the method of digestion must be considered as diastatic.

Finally, the author made similar observations, which are not yet finished, upon the phagocytes of the higher animals. The tail of a larva of *triton tæniatus* was cut off and the surface of the wound rubbed with litmus powder. In a portion of the immigrated leucocytes the granules were subsequently found to be light-red. In osteoclasta Roustizky described, in 1874, an acid reaction of the cellular contents. There are many phagocytes in which no chemical reaction was found.—*Centralblatt für Bakteriologie und Parasitenkunde*, 1889, No. 15.

ON A PERMANENTLY SLOW PULSE AND ITS THERAPEUTIC INDICATIONS.—M. HUCHARD has repeatedly had occasion to observe and treat patients who presented the symptom known as a permanently slow pulse. He is convinced that this symptom originates, in a majority of cases, from a sclerosis of the arteries and in consequence of a genuine bulbar ischæmia.

Often one cannot count more than from 28 to 30 beats a minute. Frequently the symptom is accompanied by dizziness, and even by epileptic attacks or attacks of syncope. Rarely the slow pulse occurs alone as a single symptom, but it is generally accompanied by attacks of varying character, all originating from sclerosis of the arteries. There are, in most cases, symptoms of cardiac accidents, and M. Huchard has been able to establish the fact that syncope is preceded by a characteristic retrosternal pressure, or even by angina pectoris. Slow pulse is often accompanied by various disorders related, like the latter, to sclerosis of the arteries; one may therefore, in watching the patients, see them become finally afflicted with cardiac troubles or with Bright's disease. Huchard thinks, however, that the name "permanent slow pulse" is defective, for the symptom is often only temporary; he would prefer to call

it "Stokes-Adams' disease," after the first authors who perfectly described these symptoms.

Not less interesting are the therapeutic conclusions. M. Huchard had an opportunity to observe a patient in whom the administration of sulphate of quinine, a vaso-constrictor, produced deplorable results. It is necessary to employ vaso-dilators, because we have to do with symptoms of bulbar ischaemia. This is the principal indication for the treatment. The iodide of potassium or of sodium may be resorted to, but M. Huchard prefers "trinitrine," which, like nitrite of amyl, is a congestant of the nervous centres. Of this he administers once or twice a day 3 drops of an alcoholic solution, 1:100; he makes use also of hypodermic injections, for which he employs the following formula: Water = 10 gr.; alcoholic solution of trinitrine 1:100 = 40 drops. One gram, or one Pravaz syringeful, contains 4 drops of trinitrine solution; one may make, therefore, from twice to four times a day, injections with $\frac{1}{4}$ of a syringeful.

From a therapeutic standpoint the degree of arterial tension must, therefore, be taken into consideration, which—though difficult to measure—can be estimated perhaps by an auscultation of the heart alone, with an accuracy sufficient for clinical purposes. If there is discovered at the aortic opening a diastolic accentuation of the second murmur, it may be safely supposed there exists an arterial hypertension; on the other hand, when there is lower tension, the second sound of the pulmonary orifice will be intensified. These indications are of great therapeutic importance. In the first period of arterial sclerosis of the heart, when the pressure in the arteries is too great, recourse must be had to vaso-dilators. When, on the other hand, the action of the heart becomes more feeble and the tension in the arteries diminishes, vaso-constrictors, and especially caffeine, should be used.—*La Semaine Médicale*, 1889, No. 14.

ANTIPIRYN IN THE TREATMENT OF DIABETES.—A. ROBIN sums up the advantages of antipyrin in diabetes, according to his experience, as follows:

1. It may be employed from the outset in the treatment of diabetes where a glycosuria or acute polyuria is to be reduced without delay.
2. It allows of a suspension of the diet in patients who dislike the latter, without their losing the benefit of the previous restriction.
3. It is indicated when the diet, long continued and well tolerated, has produced its greatest effect in reducing the glycosuria and polyuria.
4. A wise combination of diet and antipyrin, associated in a sort of alternating manner, appears to be the best treatment for diabetes.
5. It is not necessary to continue the use of the drug if it does not produce an immediate and considerable diminution of the glycosuria.

6. One of the best ways of judging the effects of antipyrin is not only to ascertain every day the quantity of sugar in the urine, but also to measure daily the quantity of urine and its density. The action of antipyrin is favorable in the proportion in which the quantity diminishes and the density is reduced, or at least the latter should remain stationary. But if, with the quantity of urine diminishing, its density tends to increase, the use of antipyrin should be stopped immediately and permanently.

7. Albuminuria does not constitute an absolute contraindication. Its presence simply involves a question of its dose and of the duration of its use.

8. Finally, loss of appetite, emaciation, a sensation of weakness, pallor, oppression, swelling of the eyelids, or a sensation of tension in the face, are symptoms demonstrating, where they appear, that the use of the antipyrin is more harmful than useful, even if the glycosuria should be influenced favorably.—*La Semaine Médicale*, 1889, No. 15.

AMMONIACAL FERMENTATION OF URINE.—The subject of ammoniacal fermentation of urine has recently been studied by Drs. A. RUSSO-GILBERTI and G. DOTTO in the Pathological Institute of Palermo, and they have published a note in the new monthly journal, *La Sicilia Medica*, concerning it. The discovery of Pasteur and Van Tieghem, that in the alkaline fermentation of urine the transformation of urea into ammonia carbonate is correlative with the development of an organized vegetable ferment—the micrococcus ureæ—has now lost its original importance owing to the researches of Miquel and others, which have proved that this transformation is also brought about by the action of other microorganisms. Miquel describes as a factor in ammoniacal fermentation of urine a bacillus ureæ, very slender and mobile, occurring either alone or in groups of from two to four, which can transform urea into carbonate of ammonia almost as efficiently as the micrococcus ureæ; also an aspergillus, the action of which is less prompt. Leube's researches show other bacteria with the same capacity. He describes a sarcina and three species of bacilli, very different to the bacillus ureæ of Miquel, possessing the power of hydrating urea. In Flügge's Institute a micrococcus was obtained from fermented urine which also produces energetic fermentation of urea. It is distinct from Pasteur's, and as it liquefies gelatine it has received the name of micrococcus ureæ liquefaciens. Heraeus obtained four bacilli capable of producing hydration of urea; three liquefied gelatine, and were quite distinct from those described by Leube. It is thus seen that the micrococcus ureæ is not the only microorganism possessing this property. Warrington also, making further researches, found that the bacillus fluorescens had the power of trans-

forming urea into ammonia carbonate, and that certain species of bacteria do not possess that property. More recently, Drs. Russo-Giliberti and Dotto have made experiments with the penicillium glaucum, etc. They made a 2 per cent. solution of pure urea and poured 100 cubic centimetres of it into sterilized tubes; they then sterilized the solution according to Tyndall's method, keeping the tubes one hour a day, for seven days, at a temperature of 65° to 70° C.; one of the tubes was tested by the contents being added to water, which was then distilled and sterilized, no ammonia, nitric acid, nitrous acid or carbonic acid being found. In order to prove the absence of germs, the tubes were kept for ten days in the hot chamber at a temperature varying from 25° to 30° C. In one tube in which penicillium glaucum had been sown there was found an abundance of ammonia carbonate from the transformation of the urea. Consequently, this microbe must be added to the number of those which are capable of causing ammoniacal fermentation of urea.—*The Lancet*, April 20, 1889.

THE VALUE OF SULPHONAL IN THE INSOMNIA OF THE PSYCHOSES, though just now lauded by our German *confidres* and much employed by them, is not in our opinion the equal of chloral, especially if judiciously combined with a suitable bromide salt, like the bromide of ammonium or potassium. Occasionally a patient has returned to us after a trip abroad, and the almost invariable sulphonal prescription in case insomnia followed them there or overtook them while in Germany, and we have been better satisfied with the more complete night's rest and next day's mental tranquility and refreshment that followed the chloral than with that which succeeded the sulphonal. Nevertheless Dr. A. Cramer (*Berlin Klin. Wochenschr.*, 1888, No. 34,) has made experiments in his asylum on forty-five different patients suffering from melancholia, mania, paralysis, paranoia and hebephrenia, in all four hundred and seven experiments. In 92 per cent. sulphonal produced a sleep lasting five hours or longer; it came on in from one-quarter to one hour after the medicine was administered. The dose varied from 30 to 90 grains. The remedy appeared to act harmlessly and drowsiness did not persist long, save in exceptional instances after the patient awakened. The medicine was given at night, usually the most proper time, we may here remark, for the giving of a hypnotic draught.—*Alienist and Neurologist*, April, 1889.

IRRIGATION OF THE STOMACH IN VERY YOUNG CHILDREN.—FAUCHER, who is the inventor of a tube for irrigation of the stomach, has applied it to children of the first period of life. This operation has long been practiced in Germany upon

children, and with good success. Irrigation of the stomach may be accomplished with the newborn almost as readily as with adults by the aid of a tube and funnel of suitable dimensions. The infant should be held with the head forward, so as to admit of the ready exit of matter which may flow back into the pharynx, the arms being secured under a napkin, which is tied around the neck. The author entirely disapproves of the plan of Ebstein, in keeping the child in the dorsal position while this operation is being performed. A case is narrated in which a child presented grave symptoms of gastro-intestinal disorder twenty-seven days after birth. The author washed out his stomach three times the first and the second days, and twice on the third day, the result being that the vomiting was soon arrested. The period of digestion, which at first lasted four hours, was gradually shortened, the child became quieter, the evacuations became regular, and a normal condition supervened. No medicine was given.—*Le Concours*, Dec. 15, 1888.

OSTEOTOMY FOR ANTERIOR CURVATURES OF THE LEG.—DR. DE FOREST WILLARD closes an interesting paper in the *Medical and Surgical Reporter* with the following conclusions: 1. Anterior tibial curves, during the soft and springy stages, may be corrected by manual rectification and the use of apparatus. 2. Braces are useless after hardening has occurred. 3. Manual fracture is the best and safest remedial operation in young children. 4. Instrumental fracture, or osteoclasis, is not as safe or effective as osteotomy. 5. Aseptic simple osteotomy, for all moderate degrees of curves, and cuneiform section for very severe grades, give almost uniformly good and speedy results, without suppuration. Subcutaneous operation by the saw is also a reliable operation. 6. Plaster of Paris is the simplest and most effective material for securing accurate position and maintaining absolute fixation.—*Gaillard's Medical Journal*, May, 1889.

ON THE PATHOGENIC ACTION OF MICROBES FOUND IN THE URINE OF ECLAMPTICS.—Two years ago E. BLANC made an investigation of this subject. Two rabbits were inoculated, one under the meninges, the other in the veins, with microbes isolated from the urine of an eclamptic patient. The former died with convulsions; the second had infectious nephritis. This year he repeated the experiments on rabbits, guinea-pigs, dogs and rats. The results justify the conclusion that there is in eclamptics a class of pathogenic microbes capable of producing convulsions, especially in pregnant female animals, as also special local symptoms.—*La Semaine Médicale*, 1889, No. 14.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
NO. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, MAY 18, 1889.

ELECTRICITY IN GYNECOLOGY.

The above was the title of a paper read at the recent meeting of the Alabama Medical Association, by DR. W. E. B. DAVIS, of Birmingham. He believes that ultra-enthusiasm has led to frequent failure in the use of this remedy, but says there should be no question as to its importance as a therapeutic agent in gynecological practice when such men as Apostoli, the Keiths, Engelmann and other competent observers, who have had experience in its application, report most satisfactory results.

He advises the use of the current of the Edison circuit, direct from the dynamo, when it can be had, and thereby avoid the annoyances and inconveniences of a battery. Portable batteries have proved very disappointing for the administration of high intensities, and his work has been confined principally to office practice. Great stress is laid on the importance of the application of the faradic current in sub-involution of the uterus, and every woman who has had an abortion or is confined at full term, is placed on ergot, and should there be incomplete involution at the expiration of six weeks, he begins at once the use of the faradic current, with the bi-polar, intra-uterine excitor of Apostoli, and repeats the application every second or third day until the organ has returned to its normal size, "which can always be counted on with mathematical certainty." He does not recommend the use of the current immediately after every abortion or delivery as practiced by Apostoli, since this treat-

ment could not or would not be afforded, except by a very small class, unless it were certain that the uterus would not return to its proper size. For this reason ergot is prescribed by him in every case, as stated, since he thinks it acts very much as faradization on the smooth, non-striated muscular fibre of the uterus, although not by any means so prompt, energetic and reliable. All cases are examined at the expiration of six weeks to ascertain whether involution has been complete.

Cases are reported to show the value of the faradic current in sub-involution of the uterus, and to illustrate its efficacy in displacements due to the enlarged, hyperæmic condition of the uterus following parturition. The current of tension—the current from the long, fine wire—has proven a valuable agent for the relief of pain, and cases showing permanent relief were quoted.

The currents of quantity and tension have been used with very satisfactory results as indicated by Apostoli, but recently he has used the current of tension not only for pain, but to stimulate relaxed and enfeebled muscle fibre. The current of tension is borne better by the patient, and he has been unable to recognize the superior results of the current of quantity on muscle over the current of tension. In displacements of the uterus he supports the organ with wool tampons, and does not object to any form of pessary, properly fitted, in connection with the treatment by electricity. He believes that proper support of the organ, combined with the proper application of electricity, to be the most rational treatment for this condition.

When the uterus is enlarged not from subinvolution, but *hyperplasia*, he regards the continuous current as indicated. He says all cases of chronic endometritis are amenable to galvanism—the positive current when there is much leucorrhœa or profuse menstruation, and the negative in other cases. From 75 to 150 milliampères are used twice weekly, for five minutes at a time. He does not say that electricity will do away entirely with such surgical procedures as shortening the round ligaments—Alexander's operation—or attaching the cornua of the organ to the abdominal wall, or the narrowing of the vagina by the many methods at present in vogue, but insists that many cases can be relieved by this method of treatment

*Apostoli. Chronic Metritis, etc.

which would otherwise be condemned to the knife.

He says the local application of the faradic current is capable of relieving many cases of amenorrhœa due to atrophy of the uterus. In menorrhagia, due to relaxation of muscle, to engorgement, when patient menstruates from eight to nine days, after a few applications the menstrual periods would only last from four to five days. The positive galvanic current is the remedy indicated for hæmorrhage due to a disease of the endometrium, and is the current usually indicated for hæmorrhage. Women often become pregnant soon after being treated by electricity, and it is unquestionably a valuable remedy for sterility due to nervous causes, so ably described by Dr. Campbell.

Neuralgic dysmenorrhœa and dysmenorrhœa in women of a hysterical temperament—whom the slightest excitement or worry will cause to suffer greatly—those cases where there is no apparent pathological lesion—he has succeeded, as with no other remedy, by the application of the current of tension or by the mild positive galvanic current. The negative current is indicated when the pain is due to mechanical causes in the cervical canal, and when there are inflammatory deposits around the ovaries, etc.

He said the subject which had concerned the profession most in connection with the use of electricity was *the treatment of fibroid tumors*, and the results of the treatment in the hands of Apostoli, the Keiths, Engelmann, Laphorn Smith and others, had demonstrated that this is *the treatment* for fibroid tumors which "offer probabilities of healthy retrograde metamorphosis."—Engelmann.

He had followed Apostoli's instructions in this class of neoplasms, and believed that the majority of cases could be symptomatically cured. Certainly Apostoli's treatment should be tried before resorting to hysterectomy.

HOT WATER IN ABDOMINAL SECTION.

At the recent meeting of the California State Medical Society, DR. BEVERLY McMONAGLE, Chairman of the Committee on Gynecology, read an interesting report on Pelvic Abscess and its Treatment by Abdominal Section. He mentioned one case in which "slight salivation followed the washing out of the abdominal cavity with a solu-

tion of bichloride 1:10,000." Since that occurrence he had used instead of antiseptic solutions in the abdominal cavity, pure water at a temperature varying from 110° to 120° F., but which had been thoroughly boiled. In the discussion that followed the reading of the report, Dr. H. W. Smith, of Placerville, said he had done some work in abdominal surgery; "and in using a 1:1,000 sublimate solution he had seen slight salivation follow. Since then he had used boiled water, and his cases had done much better than with either carbolic acid or corrosive sublimate."

Dr. E. A. Follansbee, of Los Angeles, agreed with Drs. McMonagle and Smith, saying that she had used the boiled water in her operations for about three years, and had found it reliable and much safer.

We have recently noticed reports of several laparotomies having been performed by different persons successfully without the use of any antiseptic solutions, using instead only hot water. And it is well known that Dr. Bantock, of London, uses only hot water in all his operations, discarding antiseptic solutions entirely, both for instruments and for perfectly cleansing wounds and cavities. Yet our London letter, in THE JOURNAL of April 20, 1889, says, concerning Dr. Bantock, "his results are unsurpassed." If the proper use of hot water is thus capable of yielding results that are not surpassed by any antiseptic solution, in the practice of abdominal and pelvic surgery, it certainly has the advantages of being cheap, ready at hand and entirely safe.

A NEEDED PRESCRIPTION.

The intensity with which Americans apply themselves to business is everywhere proverbial. Gigantic corporations, manufacturing and commercial industries, and business demands of every sort, lay upon men burdens too heavy to be borne. As a result, vast numbers succumb prematurely and seek medical advice as to the best means for relief. Absolute rest is the obvious necessity, and so the mountain air, the sea-side resort, or the ocean voyage, is the thing enjoined. The advice was timely and wise, and the results are usually highly satisfactory.

Now it often happens that the very same advice which the doctor gives to his patients should be

followed by himself. From labors so imperative and so exacting, duty to himself, to his family, and to his patients, often requires that a physician shall religiously set aside a brief portion of each year that he may turn aside and rest awhile. The prescription which THE JOURNAL proffers to its patrons is more particularly applicable to the practitioners in the Mississippi Valley and the regions which lie beyond. It is as follows :

Leave home this year early in June, spend a week among the lovely New England mountains, and instead of an ocean voyage, and the undesirable sea-sickness incident thereto, seek a sea-side resort for one full week in one of the oldest and most lovely New England towns, and while in attendance upon the Annual Meeting of the American Medical Association the recuperated physician will not soon forget the pleasure and the benefits of another week's sojourn at NEW-PORT-BY-THE-SEA.

EDITORIAL NOTES.

NEW MEDICAL JOURNAL.—*The Kansas Medical Journal*, a monthly periodical of thirty-two pages, has made its appearance on our table. It makes a good appearance both in its typographical execution and in the character of its contents. It is published at Topeka, Kansas, and edited by a committee consisting of Dr. W. L. Schenck, Osage City, and Drs. G. E. Minney and S. G. Stewart of Topeka, Kansas.

DR. HARVEY LINDSLEY, of Washington, D. C., died April, 28, 1889, at the advanced age of 85 years. He was one of the founders of the Medical Society of the District of Columbia; a Professor in the National Medical College several years; and was elected President of the American Medical Association at its first annual meeting, in Washington, in 1858.

PROPOSED CHANGES IN THE CONSTITUTION OF THE ILLINOIS STATE MEDICAL SOCIETY.—We have just received a copy of *The Peoria Medical Journal* for April, containing an abstract of the changes proposed in the Constitution of this State Society, by a Committee appointed at the annual meeting of 1888. Several of the propositions presented by the Committee should receive the careful consideration of the members before deciding in favor of their adoption. The proposi-

tion to change the *time* of the annual meetings from the *third* to the *first* Tuesday in May, is particularly objectionable, as that is the same day that nearly all the meetings of the American Medical Association have been held when the *place* has been south of the line of New York and Chicago. There should be a full attendance from all parts of the State.

ASSOCIATION NEWS.

American Medical Association. Fortieth Annual Meeting.

Section on Laryngology and Otology.

In addition to the list published May 4th the Secretary has received promises of papers from the following gentlemen. Seven of these have given only conditional promises, but it will be seen that the Section has secured absolute promises of forty papers, and promises of eleven more, most of which we may reasonably expect will be forthcoming. The Secretary desires specially to urge those who have been in any doubt about their ability to write, to make a special effort for this first meeting of the Section. The large number of papers secured must not be taken as an excuse for not writing, but each and every one should remember that his pledge may be the main reason with several physicians for making a long and expensive trip to the meeting of the Association.

The officers of this Section again urge their personal friends to make an extra effort to help them at this time.

The following names complete the list of those from whom we expect papers: J. E. Schadle, J. L. Thompson, J. H. Bryan, W. Freudenthal, Chas. Stover Allen, Frank H. Potter, J. W. Gleitsman, Louis Jurist, J. B. Lippincott, H. A. Johnson, Robert Levy, Joseph A. White, C. W. Johnson, J. D. Arnold, F. S. Crossfield, W. K. Simpson, Wm. Porter, D. N. Rankin, J. H. Bryan, Jonathan Wright, Arthur Duncan, E. R. Lewis, Max Thorner, H. Clinton McSherry, F. I. Knight, J. Solis-Cohen, J. C. Mulhall, W. E. Casselberry, S. J. Radcliff.

E. FLETCHER INGALS, M.D., Secretary,
70 State St., Chicago.
W. H. DALY, M.D., President.

Section on State Medicine.

The following additional papers have been received :

"Bacteriological Examination of Several Native Mineral Waters in the Bottled State." Dr. George Minges, Dubuque, Iowa.

"Climatological Characteristics of Salt Lake City." Dr. F. S. Bascom, Utah.

SOCIETY PROCEEDINGS.

Obstetrical Society of Philadelphia.

*Thursday, April 4, 1889.*THE VICE-PRESIDENT, W. H. H. GITHENS,
M.D., IN THE CHAIR.

DR. G. E. SHOEMAKER described an improvised waterproof drainage-pad for operations.

The only point of the arrangement here described is that it may be improvised in any household, even the poorest; and it is not intended that it shall take the place of the excellent device so widely advertised by an instrument-maker, except in emergencies. It happens to every one, however, to be called upon to do various minor operations when out of the reach of all formal apparatus, and in a number of cases where it was desirable to use water freely without wetting the bed or the patient, the writer has obtained the greatest comfort and satisfaction by the following means:

The necessary material, which can be had anywhere, consists of a sheet or thin coverlet and a piece of rubber cloth or table oil-cloth.

The sheet is folded twice, and then made into a tight roll about three or four feet long to form the rim. This roll, laid near the edge of the bed or table, is bent in the form of letter O, with a six-inch opening on one side of the O, the ends of the roll at this opening being fastened by safety-pins strongly to the edge of the mattress or the cover on the table.

When the rubber cloth is thrown loosely over this, a basin is formed which is open at the edge of the bed, and fluids readily find their way into a vessel on the floor to which the rubber cloth leads. Even a prolonged perinaeum operation, under constant irrigation, may be accomplished without any disarrangement or leakage. The same arrangement will be found to be of great assistance to patients in that troublesome procedure, the daily hot-water douche.

This may, of course, be called only an adaptation of the idea in the advertised pad before referred to. It may also be called a modification of the waterproof sheet which every woman has used on her bed since the deluge. The only object here is to call attention to the fact that we can, any of us, by simply making a curved ridge in this sheet, and paying some regard to the ordinary laws of hydrostatics, make for ourselves in five minutes a very great convenience, and save our patients and their attendants a good deal of trouble and annoyance.

DR. W. S. STEWART narrated the removal of a large, adherent, degenerated, parovarian cyst:

A young lady, æt. 24 years, was brought to our hospital from New Jersey, by her physician,

for examination and such treatment as should be determined on. I found in the left iliac region a hard mass, which, at first examination, seemed to be solid; but a more careful examination with the finger in Douglas' cul-de-sac, with palpation from above, revealed some fluctuation. On moving the uterus, the mass was found to be adherent to that organ, causing some doubt as to whether or not it was a true ovarian trouble. In consultation with my *confrère*, Dr. Montgomery, it was decided to remove the tumor, as from the history it evidently caused much suffering, with rather increased pain, distress, and irregular menstruation, and was developing more or less rapidly.

Two days later the patient was put on the table, and she almost died from the ether before the operation began. I was kindly assisted by the resident Dr. Hughes, chief of clinic, Dr. West and Dr. Dorman. On reaching the upper portion of the tumor, I found it adherent to the omentum, to the small bowel, to the walls of the abdomen, to the uterus, and to every part with which it was approximated. It was also deeply seated in the pelvis. On introducing the trocar, I found that the tumor was filled with pus. The liquid degenerated, and we had a pent-up septic fluid in an almost aseptic condition. I rapidly removed the disintegrated sac from the parts to which it was attached, working as rapidly as possible, for the patient seemed to be going to die every moment. Not finding any pedicle, I was obliged to dissect the sac off as carefully as possible, and was delayed some time in getting it off. Considerable oozing, but no special bleeding, occurred. I found the adhesions to the uterus so firm that it was impossible to separate the sac, and if I had used a knife, considerable time would probably have been required in ligating the vessels. I therefore transfixed the side of the uterus with a ligature, and tied both above and below, and clipped off the margin as close as possible without affecting the ligature. Where the sac penetrated deeply into the tissues of the pelvis, I ligated as closely as possible and clipped off the remaining portion of the sac. The pus escaped considerably through the pelvis, and I thoroughly irrigated with pure warm water and stitched up the wound, leaving a drainage-tube in position. The patient was returned to her room with a temperature of 96°, almost moribund. Under the use of restoratives, hot bottles, hot applications, and a hot room, she soon regained her normal temperature, and made a speedy recovery without an untoward symptom. The stitches were removed on the eighth day, and the drainage-tube allowed to remain until the ninth day. The present prospects are, that the patient will entirely recover, and is now (third week) going about her room in the hospital.

As bearing on the cause of this trouble, I would say that I have learned that she lived on a

farm, and that four years ago she took the part of a man in the harvest-field. Her work was pitching the sheaves from a platform in the barn up into a higher portion of the mow. Not having the strength to use the long-handled fork, she put her elbow down on the affected side, and with this as a fulcrum, and the other hand as a pry, she threw the sheaves up. In this way, possibly, she injured herself. This is a suggestion worth knowing, as a possible cause for this development. At this time she was wearing corsets, and this would confine everything, so that the pressure of the elbow caused an additional strain or possible contusion.

DR. M. PRICE: One point that I have noticed in regard to these pus tumors is, that the danger of the operation does not seem to be increased by the fact that they are filled with pus. The patient referred to had probably been in a septic condition at the time of operation, and the moment that the tumor was removed and thorough drainage instituted, her chances probably were as good, if not better, than in a case of simple tumor not in a sloughing condition. I have never seen a tumor filled with pus give any trouble after removal. So far as I know the patients have always done well.

DR. J. M. BALDY: I must disagree with Dr. Price. It seems to me that the presence of pus and of a septic condition would considerably increase the risks of operation. In the removal of a cyst in which there had been no septic trouble, and before suppuration had taken place, the woman would be in good condition, and probably have suffered from no symptoms, save, perhaps, those of slight enlargement. In a case of that kind the risks would be small. Where a woman becomes septic from whatever cause, the risks are seriously increased.

In regard to the cause suggested, I think that there is no very good basis for assuming that this had any effect. I do not think that the pitching of sheaves and the pressure of the elbow would cause the development of such a tumor. This might have been an incidental exciting cause, but that it was the primary exciting cause we have not sufficient ground for believing. Many women develop tumors without having any severe labor of that kind. On the other hand, I have seen women who have performed such labor daily, to the severity of which I can personally testify, and never develop anything like ovarian trouble. The wholesome exercise of working in the field would, in a healthy woman, predispose rather to good health than to disease.

DR. M. PRICE: It is a well-established fact in surgery that a recent injury in a previous healthy individual requiring a surgical operation is more dangerous than where the operation is for an old injury. The chances of the second patient would be a hundred-fold better. I had my limb broken.

A healthier boy never lived, and for six weeks it was a struggle for life. A year later I had the limb amputated, and I can testify that I have suffered more from the extraction of a tooth than from that operation. If the limb had been operated on at the time of the injury, I should probably have died. I was not used to suffering. There had been no preparation. I do not pretend to say that the presence of pus gave the patient a better chance, but the suffering prepared her for a surgical procedure which, in her case, would be more successful than it would be in a case of simple tumor with adhesions. In uncomplicated ovarian tumor, the operation is one of the simplest in surgery. The case reported was probably one of intra-ligamentous cyst, or perhaps a twisted pedicle. If the operation had been performed before pus appeared, with these strong, unchanged adhesions, her chances would not have been so great as after sloughing had taken place, and degeneration of the adhesions had begun. There was less hæmorrhage and less shock. The patient had been prepared for what had to be done.

DR. W. L. TAYLOR: I would agree with Dr. Baldy that the removal of a sloughing cyst would cause greater risk to the patient than the removal of a simple ovarian tumor. A patient with a sloughing cyst is necessarily suffering from septic trouble. She is weak and depressed, and her vital powers are lessened. In an ovarian cyst the vital forces are in a good condition for operation. This is the only point to which I would refer, as I did not hear the paper.

DR. STEWART: I think that both Dr. Baldy and Dr. Price may be right. Where the septic condition has not reduced the patients to such an extent as to preclude their recovery, they often resist shock and recover rapidly. The shock is less severe than in an operation in a patient in vigorous health. I can understand this, and have seen it in some cases. In my case the patient scarcely survived the operation; but when the effects of the shock had passed off, her recovery did not seem to be influenced whatever.

DR. J. HOFFMAN read the following:

CRANIOTOMY FOR A CASE OF HYDROCEPHALUS. with a discussion of the Technique of the Operation, together with a Consideration of the Conditions that demand it.

At midnight of Dec. 23, 1888, I was called by a midwife to see a woman. She was unable to deliver, after, as I afterwards found out, continual effort for four hours. I found the woman much worn out by her pains, which were ineffectual, though her pulse and condition were, all in all, good. Examination showed a large head, well engaged, lying transverse in the pelvis, the occiput to the left.

I at once put on the Pouliet forceps but though

they were accurately applied, was unable to rotate the head, the forceps finally slipping. After a great deal of difficulty, I again succeeded in applying them, with like result, slipping on traction. A third effort to apply them was only successful after placing the woman on her side. Traction, was, however, no more successful than before. I then desisted from further efforts at delivery, two hours having elapsed, and brought Dr. Joseph Price in consultation. Dr. Price, after a great deal of trouble, succeeded in applying the Tarnier traction forceps, with no better success, however, than had followed the use of the Poullet instrument. From the constant slipping of his forceps, Dr. Price suspected a hydrocephalic head, and so expressed himself. I, on the contrary, thought otherwise, as the bones while not so firm and resisting as usual, did not seem to be sufficiently flacid to indicate dydrocephalus, at least to me. Events, however, proved the correctness of Dr. Price's suspicion, or rather diagnosis; for there being no heart sounds when the head was perforated, the rush of water left no doubt as to the true condition. The instruments used were those presented to-night, as they already have been before. They consist of a crushing forceps, which, from its pelvic curve, is as readily introduced and applied as the ordinary forceps. The non-fenestrated blades afford the safety of a speculum for perforation, and leave no manipulation necessary after that part of the operation has been performed. All considering this subject seem to take for granted that the crushing instrument in all craniotomy procedures must be applied after perforation. This, it seems to me, supplies one of the greatest dangers of the operation, and conduces to an unnecessary fatality. The preapplication of the crushing instrument not only protects the maternal soft parts from the danger of injury by the perforator, but also a more exact adjustment, by a gradually applied force as the head is reduced and its contents evacuated by the perforator. The ease of application of this instrument can be appreciated by any one familiar with the ordinary forceps.

The point of this perforator Dr. Price has intended to be protected by the buckskin finger, and the skull pierced through it. This is, however, not really necessary, as the speculum afforded by the crushing blades, together with that afforded by the introducing finger, makes the leather unnecessary.

The combination of instruments afforded in this craniotomy set seems to leave nothing further to be desired, even if further destruction of the foetus is necessary, than the mere reduction of the head. For the consideration of the conditions which demand this operation, there is at present, perhaps, a greater necessity than the mere statement of its technique with any set of instruments whatever. Many of our recent

writers apparently desire to condemn it in all cases whatsoever upon the living foetus without exception. As a type of these may be taken the views of Dr. Busey, in the *American Journal of Obstetrics*, January, 1889. These writers, of which Dr. Busey may be taken as a type, fail to appreciate the fact that we need go back no further than Hodge to find that in cases where the short diameter of the pelvis is two inches or under, the Cæsarean operation is to be preferred, as affording a better prospect for the mother, while having the strong recommendation of affording a good prospect of safety to the child; this, too, before the improved Cæsarean operation was devised. These writers seem, too, to fail to appreciate that long ago as the writer referred to, to go no further back, the early performance of the Cæsarean section was specifically stated as justifying strong hopes for "the salvation of both mother and child." It is not the purpose of this paper to discuss the relative merits of the Cæsarian section and craniotomy, nor the comparative values of the mother's and the infant's life. It is not possible to avoid, nevertheless, the observation that those writers who unhesitatingly apply the statistical method at arriving at conclusions relative to these in favor of the first operation, seemingly forget that the dangers of craniotomy almost entirely lie within the limits already admitted into the domain of legitimate Cæsarian section, and that outside of these cases the danger to the mother is almost absolutely nothing, as admitted by Lusk in his late discussion. They seem, too, to consider that craniotomy, to be successful, must be done by the expert, and that the Cæsarian section is the safer, no matter by whom performed. To this we submit a positive disagreement, though even Dr. Tait has gone so far as to say in effect that the removal of the pregnant uterus is a simple operation, Dr. Busey refers to the "dream of Tyler Smith, as to the abolition of craniotomy from the obstetric practice."

When we consider the paper of Tyler Smith, to which reference is made, we can readily understand how opportune was the plea. The table of cases therein quoted from cases in "British Practice," affording excuse for craniotomy, state twenty-five indications for its performance, among which are, to wit: arm or shoulder presentations, rupture of the uterus, face presentations, bands or cicatrices in the vagina, placenta prævia, rigidity of the perinæum, occipito-posterior presentations, etc. "With such 'indications' as these there was need of a voice crying in the wilderness."

The point to be here considered is whether the decrimal of the abuse of any operation necessarily implies that there is never any requirement or justification of such operation. We think not. No one will dispute that where there is danger

to the mother in the performance of craniotomy, the conservative operation of Cæsarian section should be performed. On the other hand, where there is no danger to the mother whatever, I consider it questionable whether any obstetrician here present would subject his own wife to the danger of a capital operation in order to save the life of the child. Secondly, in cases where such deformity as hydrocephalus or spina-bifida is discovered, I do not believe that the life of the child should be considered as compared with the mother's in the danger of the Cæsarian section, providing that the pelvic contraction be not so great as to bring craniotomy farther beyond the danger line than the Cæsarian operation.

The application of the same principle in the case of monsters needs no discussion.

The woman recovered without a bad symptom.

DR. STEWART: I would say a word in regard to this case of hydrocephalus. I have had two or three such cases and have had no difficulty in delivering after penetrating the skull and allowing the water to escape. I consider this an ingenious instrument, but I have used the old-fashioned perforator, cutting both ways. After introducing the blades and separating them you have a free escape of the liquid. The skull then collapses and there is no further difficulty. You can deliver then with any forceps. Such has been my experience.

DR. DANIEL LONGAKER: I have not used this instrument of Dr. Price, but I can readily see that in a certain class of cases, *e. g.*, hydrocephalus, it would be excellent. I desire, however, to say, that in craniotomy, and especially in cases of marked deformity of the pelvis I have used with the most marked satisfaction the cranioclast of Braun, and the perforator of Blot. I do not see how in ordinarily careful and skillful hands any injury can be done with this perforator. The trepan is certainly a safe instrument.

DR. J. PRICE: I have discussed this matter on several occasions, but the remarks of Dr. Longaker invite me to say something. The application of the instruments mentioned is difficult. When closed they occupy one inch of pelvic space. Much damage is often done, and the mortality in craniotomy has been largely due to injury of the maternal soft parts by this instrument. In one case the sacrum was trephined with the instrument alluded to. Hodge long ago called attention to the use of the ordinary forceps as a compressor. This instrument is made on the same principle, and the strength is in the handles. You can crush anything with this instrument. Anyone who can apply forceps can apply this instrument in any pelvis where the forceps can be applied. It can be applied in a pelvis with a diameter of one and a half inches. I have seen it successfully applied by beginners in the case of dead children without doing any mischief. The

instrument is used first as a speculum, second for fixation, and third for compression.

DR. LONGAKER: It is only necessary to refer to my own experience with cranioclasts, and to confirm my favorable opinion of the operation. I will refer to a paper which can be found in the *American Journal of Obstetrics*, I think, for December, 1884. Cases by the fifties and hundreds are reported without a fatal result. This is a proof of the safety of cranioclasts, which I consider the better operation where there is a high degree of pelvic deformity.

DR. J. PRICE presented specimens with remarks:

I desire first to present two fresh specimens. One was very unique, removed day before yesterday,—a case of double pus-tubes and double ovarian abscess, with pus in the cellular tissue. The ovaries were cheesy shells, and they both ruptured in the removal. The pavilions were entirely gone. There was no hesitation on the part of those present in regard to the character of the fluid. It was pus. Much has been said in regard to the character of the fluid from this locality. If such liquid was removed from other parts of the body there would be no question in regard to its character. I open one of these tubes before you, and I trust that you will examine the fluid carefully.

This is a typical case of ovarian cyst, no larger than an egg, with no semblance of the pavilion. This contained fluid; but I do not claim that it was pus. The cyst was strongly adherent, and I had to shell it out.

Here is an enormous ovarian abscess, unquestionably due to gonorrhœa.

You will find that the most of these tubes have been cut through, and a stick inserted. Most of them on removal were as large as the uterus. All of the patients were great sufferers. I am sometimes asked what becomes of the patients who refuse operation. In five of these cases I had urged section from a few months to several years previously.

This specimen is from a woman to whom I urged operation five years ago. It is an enormous dermoid cyst, encapsuled by omentum. It looked like a hopeless case, but she made a good recovery.

Here are two small ovarian cysts, in which it would have been easy to guess at the diagnosis of extra-uterine pregnancy. Here are typical pus-tubes, and you can bear in mind that the character of the fluid in these cases was that of the tubes before you.

I have here a group of four or five small cysts, the removal of which I consider important. These patients suffered severe pain. These occurred in young women who were able to definitely locate the seat of the pain. One of these small cysts developed in a recently married woman

19 or 20 years of age. She saw me three days ago, three months after the operation, and states that she has missed the last two periods.

This small tumor was removed by Dr. Müller, of Germantown. The ovary is healthy, and you see a very pretty parovarian cyst. The woman made a speedy recovery.

I have here two extra-uterine pregnancies. The placenta and clot in one is seen in the tube, and can be removed. This is unquestionably an extra-uterine pregnancy. In the other the placenta is inside. The specimen has been examined by Dr. Piersol and Dr. Meigs, and they state that it is undoubtedly extra-uterine pregnancy. This is a hydrosalpinx of the opposite side of the first case. Here you have a beautiful illustration of the existence of double disease. On one side desquamative salpingitis, hydrosalpinx, and pus-tubes, and on the other side extra-uterine pregnancy. The second case was an example of double tubal pregnancy, and both tubes had ruptured. This woman lived after the uterus had been curetted twice, and iodine had been injected after the second operation. The bleeding continued, and until the abdomen became distended, it was not deemed necessary to do anything further.

I desire to say that four of these operations followed Emmet's operation for laceration of the cervix. If there exists any tubal disease, this is a dangerous procedure. Some one has remarked that Emmet has gone back on his operation. He has uttered a word of caution because of the mortality in the hands of some of his followers. Many of the cases come back to him. Where there has been tubal disease, many deaths have occurred, and many patients are invalids. I do not condemn the operation. I know it to be valuable in well-selected cases, when you can exclude the existence of tubal diseases.

DR. M. PRICE: Here again comes up the question of the preparation of the patient by the leakage that has been going on in the pus cases. I have seen at least fifty pus cases in the last two years. Very rarely is it that you can deliver the tube without some leakage and perhaps rupture. These cases have recovered and do better than some simple cases. Our nurses always prefer a pus case where a drainage-tube has been used. Where a patient is poisoned and dying, no one makes any claim that there is any advantage; but where inflammatory changes have been going on for a long time, there is, unquestionably, a preparation. I have never seen but one case of pus in the pelvis die. That case died from starvation from the nurse drinking the milk. These cases recover if the enucleation has been done with care, and irrigation and drainage properly performed.

DR. HOFFMAN: In regard to the gonorrhœal origin of these troubles, I would say that two

weeks ago I had a child two weeks old brought to me with sore eyes. I applied nitrate of silver, and gave explicit directions as to treatment. In three days the child lost its sight. I found that the mother had gonorrhœa of the most virulent form. I also found ovarian and tubal trouble very marked on one side. She had been married only a short time and previously had known no trouble. There seems to be a connection between the inflammation of the child's eyes, the gonorrhœal discharge from the vagina of the mother, and the trouble in the pelvis.

DR. J. M. BALDY: I do not care to say anything in regard to pus-tubes, because my views have been often expressed. I would again take exception to the view of the preparation of the patient by sepsis. It is true that in many surgical injuries better results are secured where the operation is done some time subsequently than when it is done at once. This is not because of septic infection. Shock is here a great element. This brings up the old theory that it was better to allow ovarian tumors to reach a large size, in order that the peritoneum might be prepared, etc. We have long since given this up, and we shall quickly have to give up the idea that the patient is prepared for operation by being septicly infected.

Dr. Hoffman has referred to the connection between inflammation of the child's eyes and gonorrhœa in the woman. Individual cases do not go for much. The fact that the child has inflamed eyes does not indicate positively the existence of gonorrhœa. The nurse's hands being contaminated by the septic lochial discharges may infect the child's eyes.

In discussing this matter in the Pathological Society the other night, the president stated that he had seen unquestionable gonorrhœal pus-tubes removed from a single woman. On inquiry, however, he admitted that the woman had had two criminal abortions a short time before. This was probably the cause of the inflammatory trouble, and this is the history of many of these cases. I protest against the view that assigns gonorrhœa as the cause of all of these cases. It is a dangerous teaching for ourselves as a profession, and it is dangerous teaching to the laity. If we teach the laity that all these cases, or most of them, are of gonorrhœal origin, we shall cause an unlimited degree of marital unhappiness throughout the country, and shall cause irreparable family troubles. We certainly have to have better and more scientific ground than mere clinical histories before we can accept this extreme view. Dr. Hoffman, in a recent discussion, cited the statistics of Bernutz and Goupil as a proof of this view. Out of ninety-nine cases, about forty-six were of gonorrhœal origin, and these were in the lowest class of women. Even by these picked statistics, and amongst this low class, over half

were of septic origin, and many of the supposed gonorrhœal ones I would be inclined to dispute. I must adhere to my opinion, that by all odds septic infection is the most common cause.

DR. M. PRICE: The report referred to was from Charity Lying-in-Hospital, with a record of fifty per cent. gonorrhœa. The remainder are attributed to sepsis and wounds during labor.

DR. W. H. PARISH: I would endorse what has been said as to the inadvisability of operating for lacerated cervix where there is disease of the tubes and ovaries. We know that salpingitis is often an extension from the endometrium, often gonorrhœal, sometimes septic. Thorough drainage is important, not only in the treatment of the endometritis, but also in the palliative treatment of the endo-salpingitis. By narrowing the uterine canal, we prevent the free escape of pus and other fluids, and aggravate the trouble. I consider it unwise and not safe to operate on these cases. Within the past week I was called to operate on a lacerated cervix. I had not seen the patient for twelve months. After etherization, I found evidence of tubal disease on one side and declined to operate on the cervix.

DR. J. PRICE: In regard to this question of percentage I agree largely with Dr. Baldy. He admits this evening what he did not admit in the discussion at the County Medical Society—that these cases are largely due to gonorrhœa. Criminal abortions, cold, and exposure are other common causes of such mischief. Mr. Tait, and many others, are operating on a simpler class of cases than we are. Operating to save lives has been the course of many Philadelphia operators. In all of the cases reported the operation was done to save life.

The operation should be rapid, every detail should be shortened. The ligature should be the finest possible. Large plaited ligatures are not absorbed, and are at the bottom of many sinuses. The ligature should be applied at the root of the tube. Complete delivery of the tube and ovary, tying at a good surgical neck; then thorough irrigation, with careful closure and perfect drainage. There are two things in which my convictions are as firmly fixed as in anything in medicine; and that is, first, the value of irrigation, and, second, the value of drainage.

Gynecological Society of Chicago.

Regular Meeting, Friday, Dec. 21, 1888.

THE PRESIDENT, CHARLES T. PARKES, M.D.,
IN THE CHAIR.

DR. W. W. JAGGARD read the following note, entitled,

TWO OBSERVATIONS OF TYPHOID FEVER
DURING PREGNANCY.

I report the two examples of typhoid fever

during pregnancy, both on account of the intrinsic interest of the case, as well as to bring out the experience of others with this complication. Typhoid fever is of very frequent occurrence in Chicago, and the Fellows that have resided in the city for a considerable period can doubtless supply important facts that bear upon the reciprocal relations of this disease and pregnancy.

This note may be regarded as in a measure supplemental to the excellent discussion of typhoid fever, recently held before the Chicago Medical Society, at the suggestion of its President, and our distinguished Fellow, Dr. J. H. Etheridge.

Observation No. 1.—This case was observed and described by my friend, Dr. William M. Findley, of Altoona, Pa.

Mrs. M. H. Y., aged 24 years, Irish extraction, whose husband had been ill some six weeks with typhoid fever, was, after the initial prodromata, taken down with well-marked typhoid fever, May 7, 1873. Temperature and pulse ranging high in evening, with epistaxis and diarrhœa early. The case would not have attracted unusual attention except for the fact that she was pregnant, and her labor was anticipated on the 10th of May, 1873. She, however, was not taken in labor until the 15th of May. On the evening of the 14th of May I was called about 9 P.M., after my regular visits for the day, and found her condition as follows: Temperature 103°, pulse 140, respirations 36, with marked bronchial irritation and secretion—having had six characteristic stools during the day in spite of remedies—and the contractions of the uterus quite strong and regular, os dilated to half-dollar piece size and dilating. The heart being very feeble, and jactitation marked, with exhaustion coming on rapidly, I gave her, *ad libitum*, best port wine and brandy, so that in the four or five hours of labor she took about a quart of brandy, and about as much more port wine, with no other effect than to keep her in the same condition as I had left her before labor came on. In due time the labor was terminated, contraction was perfect, once the product of conception was expelled completely, and no untoward results followed. Although during labor her bowels were moved copiously some six or eight times, after labor the bowel trouble seemed to subside greatly, and she passed on to convalescence in some three weeks without marked irregularities, as in an ordinary case of uncomplicated typhoid fever. The secretion of milk was entirely suppressed, the mammary glands never showing any signs of activity during her illness.

The condition of the child, however, was remarkable. The entire cuticle or epidermis was shrivelled and creased as though it had been macerated in hot water, and in a day or two it was covered with bullous spots from head to foot, vesicular first, then pustular. As the boy was

healthy in other respects, in the course of a week or ten days the eruption, under emollients, was well, and the cuticle becoming detached was replaced by healthy skin tissue and the baby was well, except that as a young man he carries the cicatrices of some of the bullæ.

Observation No. 2.—This case came under my own observation. From the history of the case, written by Dr. B. L. Riese, I make the following extracts:

Mrs. A. McG., 23 years old, married June 17, 1888. Last menstruation June 10, 1888. Morning sickness six weeks after marriage. Husband and wife taken sick with typhoid fever about the 28th of August; both admitted to Mercy Hospital September 4th. Husband died a few days later of a malignant type of the disease. In the case of the wife the disease pursued a typical course lasting about three weeks; maximum temperature, 103.4 F.; maximum pulse, 130. October 1st, several days after the subsidence of the fever, severe pains referred to the hypogastric region, hæmorrhage from the vagina. After irrigation of the vagina, indagation revealed the vaginal portion softened and the ovum presenting through the cervical canal. Plan of treatment, expectant, in the absence of serious hæmorrhage or symptoms of sepsis. October 3d, escape of liquor amnii; on examination, foetus protruding through the os externum; removal of the foetus, placenta and membranes by bimanual manipulation under aseptic conditions.

The patient made an uninterrupted recovery. The ovum corresponded to the fourteenth week. (Presented for inspection.) The apparent cause of abortion in this case was hæmorrhage into the decidua serotina and placenta fetalis. The extravasation occurred before the removal of the product of conception. This fact is evident from the characters of the clot, as large as an English walnut, and firmly imbedded within the placental tissue. The presence of hæmorrhagic endometritis may be inferred from the character of the decidua vera and chorion læve.

With reference to the mutually unfavorable relations of typhoid fever and pregnancy, experience teaches that pregnancy confers upon the individual no immunity from typhoid fever. Upon the other hand, the course of this disease is commonly modified unfavorably, and the fever in turn exercises a distinctly prejudicial influence upon the course of gestation. The tendency to the interruption of pregnancy is more marked than in any of the acute infectious diseases, with the possible exceptions of small-pox and cholera. In about two-thirds of the cases collected by Kaminski, Zülzer, Scanzoni, and others, pregnancy was prematurely interrupted.

The chief causes of abortion or premature labor are to be found:

1. In the elevation of maternal temperature

causing death of the foetus by isolation, or its premature expulsion by thermic irritation of the uterine musculature.

2. In the almost constant hæmorrhagic endometritis, illustrated by the specimen presented.

3. In the depression of the maternal blood-pressure with asphyxiation of the child.

4. Until within a recent period the transmission of the infection through the placenta from the mother to the child has been regarded as possible, but not demonstrable. Lately, however, Widai and Chautemesse have detected the bacillus, alleged to be characteristic of typhoid fever, in the blood of a foetus corresponding to the fourth month.

The unfavorable influence of pregnancy upon typhoid fever lies especially in the tendency to abortion or premature labor at a time when the loss of blood and the muscular exertion necessary to effect the expulsion of the product of conception may precipitate the lethal issue from exhaustion. There is also increased risk of perforation.

DR. E. J. DOERING: I would like to have Dr. Jaggard tell us whether or no there are any statistics by American authors. I have had two cases, one last September, in which the fever lasted from three to four weeks, and in both of which pregnancy was not interrupted. One lady was in the sixth month of pregnancy, the other in the seventh month. The temperature in either did not exceed 104.5° F. It is my experience that these cases are liable to go through without interruption. Before the discussion is closed, it seems to me it would be well to have the experience of members present. They must have seen such cases, and I do not think we should let the subject go by without all the members stating their experience. In my last case I expected daily that the patient would miscarry, but to my surprise she went right along. That was quite a severe case. In the other case the fever did not go quite so high, but the last case was typical, and lasted fully four weeks. I not only thought she would miscarry, but had grave doubts as to her recovery. But to my surprise and pleasure she passed through safely, and returned to her home in Mobile some months later.

THE PRESIDENT: If my recollection serves me, I am satisfied I have seen several cases of pregnancy complicated with typhoid fever, and I am quite sure that every one of them miscarried where the pregnancy was early; in those in which the typhoid fever came on towards the later stages of pregnancy the patient not only miscarried, but lost her life as well. Of course I cannot now recall the exact number, nor the cases, but that is the recollection I have. It seems to me I have often heard doctors say that it is rather an impression among medical men, that if they have a case of typhoid fever in pregnancy it is likely to be followed by a miscarriage.

DR. JOHN BARTLETT: I recollect but one case. That was many years ago, in which a woman pregnant about four months, and in the third week of typhoid fever, doing quite well, was taken in abortion. She went through the process of labor satisfactorily, but died the next day.

DR. BAYARD HOLMES: The transmission of the bacillus of typhoid fever through the placenta is a matter worthy of consideration. We know that in certain cases of anthrax the foetus is not infected, although the mother's blood is full of the bacilli. After the birth of the living, healthy foetus at term, a sufficient period follows for the incubation of the disease, and then appears anthrax; first in the umbilicus, then general symptoms of anthrax septicæmia. In other cases, however, the foetus is infected with the anthrax *in utero*. In a paper that I presented to this Society some months ago, I held that the pyogenic infection of the foetus through the placenta was a comparatively rare occurrence. Since that time I have paid considerable attention to that subject, and I conclude that my statement should be limited. All cases in which infection of the foetus *in utero* has or has not taken place can be reconciled. In cases of sapremia with the presence of multiple known bacteria in the blood of the mother, those bacteria are all included in phagocytes. These phagocytes are sufficiently powerful to prevent the multiplication of the microbes, although they are not able to destroy them. This accounts for those typical cases of Bollinger, in which the foetus was not infected, although the blood in different parts of the body of the mother sheep contained the anthrax bacillus. Whenever, on the other hand, the sapremia has advanced to the condition of septicæmia, and the phagocytes have been overcome, and multiplication of the bacteria takes place at their expense, then embolism occurs in the peripheral arteries, that is to say, in the uterine wall, and the multiplication of the microbe follows at that point in close proximity to the foetal circulation. In this way they force themselves onward into the capillaries of the placenta, and the foetus is infected. In relapsing fever, and all cases of septicæmia, the infection of the foetus is the rule. Typhoid is a form of septicæmia, at least in the latter part of the first week. The symptoms of septicæmia are then present, viz.: capillary embolism in the skin forming hæmorrhagic spots, the characteristic rose spots of typhoid; ptomaine poisoning, which either raises or lowers the temperature; internal capillary embolism resulting in splenitis, pneumonitis, hepatitis, nephritis, and in cases of a pregnant patient, hæmorrhage in the distended capillaries of the decidua in close proximity to the placenta. At first it is simply a miliary hæmorrhage, but as the destruction of the capillary wall increases by coagulation necrosis, a considerable quantity of blood escapes between the placenta

and the uterine wall, and contractions of the uterus are initiated which ultimately expel the contents of the womb.

The case which Dr. Jaggard reports from Pennsylvania seems to me to be one of acute pemphigus (Demme), and due to a secondary mixed infection of the mother, and not directly to the typhoid disease. Pemphigus is a relatively frequent form of secondary infection in children, but in the adult its manifestations are so trivial that a diagnosis is difficult. On this account the mother who was primarily infected seemed to escape, while the non-resisting child suffered the terrible disfigurement of the disease.

DR. JAGGARD, in closing the discussion, said he was unable to find in the literature of the subject any statistics from American sources that related to the items touched on in his communication.

The rôle that elevation of maternal temperature plays in the causation of death of the foetus depends chiefly upon the rapidity with which the rise occurs, and the duration of the pyrexia. As pointed out by Doléris, Doré, Max Runge and others, if the elevation of maternal temperature occurs slowly, and if it be of brief duration, the foetus commonly escapes injury.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR REGULAR CORRESPONDENT.)

A new Penny a Week Collection Scheme in Connection with the Hospital Saturday Fund—Recent Small-pox Epidemic at Sheffield—Case of Fractured Spine—The Hot Water Cure—Prize of £100, and a Gold Medal for the Best Essay on the Etiology and Prevention of Yellow Fever—Street Ambulance Organization for London, etc.

A new penny a week collection scheme in connection with the Hospital Saturday Fund is about being inaugurated. The scheme is to raise 500,000 pence weekly (£100,000 annually) and thus remove the debt from the London hospitals. In the various hospitals in London at the present time there are 2,637 unoccupied beds and quite 2,000 would be occupied if the funds were forthcoming. The promoters of this new movement invite the assistance alike of employers and employed in collecting subscriptions, which will be purely voluntary and limited to one penny a week.

The recent severe epidemic of small-pox at Sheffield forms the subject of an exhaustive report to the Local Government Board by Dr. Barry, who has accumulated an enormous mass of facts dealing with every aspect of the outbreak, its origin, its spread through the town, and the

influence of vaccination in preventing its further spread. The full magnitude of the outbreak is attributed by Dr. Barry to the spread of infection from the small-pox hospital to which the earlier cases were sent. Twenty-three maps of the most populous portions of the town are annexed to the report. Around the fever hospitals a number of rings are drawn at intervals of 1,000 feet. In the first two maps the cases are scattered indiscriminately about the town, but at an early period they showed signs of congregating around the hospital. This tendency soon became very marked. The hospital was the centre, as it were of the epidemic. As the months wore on the infection spread steadily over a wider area, the cases moving outwards from the hospital like waves on the surface of a pond from the centre of disturbance. There is no possibility of doubt, after an inspection of these maps, that in some way or another this hospital, situated close to the work-house, and on the edge of a very populous district served as a focus of infection. A few sporadic cases were taken there, and served as the centre from which the actual epidemic spread. During fourteen weeks, from May 21, to August 27, while the hospital was in full operation, the proportion of infected houses within a radius of 4,000 feet was seven times that in other parts of the town. Within 1,000 feet of the hospital the proportion was three times as great as in the next zone between one and two thousand feet away. This again was three times as severely scourged as the next zone, between two and three thousand feet, while that had twice as large a share of infected houses as the outermost zone at a distance of from three to four thousand feet. Even this outside zone had a proportion of infection double that of the rest of the town. At subsequent periods the distribution altered in consequence of the outward spread of the infection. During February and March, 1888, the operations at the hospital were lessened owing to the removal of all acute cases to another hospital. The result was at once a rapid falling off in the number of cases within the hospital area. Dr. Barry's report appears to show that a small-pox hospital is quite out of place in the centre of a populous district, and is a very great source of danger to the population which it is intended to protect.

The statistics of the attacks on vaccinated and on unvaccinated persons are of the utmost interest and importance. Thus while among every thousand unvaccinated children below 10 years of age there were 101 cases with a death-rate of 44, there were only five cases in every thousand of vaccinated children and a death-rate of .09. The contrast was equally marked among the children actually living in houses invaded by the disease. Thus while the rate for vaccinated was 78 with a death-rate of one, that of the unvaccinated was 869 with a death rate of 381. Among older per-

sons the contrast was not so great, but it was still decisive. The result may be shortly summed up by saying that a vaccinated child is 381 times less likely to die of small-pox than one who is unvaccinated, while among older people those once vaccinated were 51 times, and those twice vaccinated 640 times, less likely to a fatal attack of the disease than those who had never undergone the operation of vaccination.

Mr. Herbert Allingham lately had an interesting case of fractured spine under his care. The patient, æt. 31, was admitted into hospital having fallen 40 feet, causing a fracture. He was paralyzed from below the level of the ensiform cartilage. As he did not improve, in fact, seemed to lose ground, Mr. Allingham trephined the spine through an incision 10 inches long. It was seen that the lamina of the sixth vertebra was badly fractured and depressed. He therefore, with the bone forceps, snipped off the laminae and spinous processes of the fifth, sixth and seventh vertebrae, exposing the cord for about 4 inches. The operation took an hour and a half and the wound was dressed antiseptically. Healing had taken place in about ten days, and the symptoms of ascending changes checked. Some amount of improvement subsequently took place, the level of the paralysis being brought down to the umbilicus. Mr. Allingham considers that by timely trephining inflammatory ascending changes are prevented, that no bad symptoms follow the laying open of the spinal dura mater, and that the operation, although tedious, was not difficult, and does not lessen the chance of recovery.

There is quite an enthusiasm at present in London for the hot water cure. The victim of indigestion, eczema, headaches, palpitation, sleeplessness and other ills, imbibes a half-pint of very warm water night and morning, with finely minced beef for his food, and feels, it is said, restored to youthful vigor by the simple regimen. Many busy city men are stated to have received much benefit from the treatment.

A medical man near London has just met with a tragic death. His child was attacked with diphtheria and he found it necessary to perform tracheotomy, and it was in sucking the tube, which had become blocked, that Mr. C. I. Moore contracted the disease, which terminated fatally not only in his own case but in that of his child also.

The Parkes triennial prize of £100 and a gold medal for the best essay on the Etiology and Prevention of Yellow Fever, has just been awarded to Surgeon Firth of the Army Medical Staff. The subject for the next prize is "The Influence of Soil as a Factor in the Production of Disease, especially in Hot Climates." The competition is open to all medical officers of the army, navy and Indian services of executive rank on full pay.

A sufficient sum of money, £1,500 in all, has

been realized to cover the initial expenses and the cost of working for the first year of the excellent scheme of a street ambulance organization for London. The idea has been worked out by the Hospital Association, who have obtained a strong committee. It has been decided to invite the chief of the police and fire brigade to join the committee. Within two months it is hoped the system will be in working order.

Professor Virchow is stated to be busily engaged in rewriting his great work on Cellular Pathology. He expects to conclude his labors at a comparatively early date.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Relation of the Tubercle Bacillus to the Etiology of Phthisis—to the Early Diagnosis and Prognosis of Phthisis—The Specific Nature of Phthisis—The Influence of the Microbe Theory on the Treatment of Phthisis.

At the first meeting in May, of the Academy of Medicine, Dr. W. B. James read a paper on *The Relation of the Tubercle Bacillus to the Etiology of Phthisis*. The result of the enormous number of original investigations which had been carried on since the discovery of the bacillus, in 1882, he said, had been to confirm the correctness of Koch's conclusions. It was also fairly well established now that the tuberculous process is capable of setting up inflammatory action in adjacent tissues which may be either acute or chronic in character. By pulmonary phthisis he understood a tuberculous inflammation of the lungs, and he therefore considered any secondary and contributing cause or causes as unnecessary. Clinical experience taught that different individuals respond very differently to the tuberculous infection, and also that the same individual responds differently to it at different times. In this connection he referred to the results obtained by Dr. Trudeau from exposing animals inoculated with tuberculous virus to different kinds of environment. In the dead-house of the New York Hospital, he said, he had been struck with the large number of individuals whose lungs presented lesions which showed that they had at one time been the subjects of phthisis and had recovered from it. Whether or not any previous lesion of the lungs was necessary for the development of tuberculosis he did not think was established. The sum of clinical experience seemed to indicate that tuberculosis develops more readily when there has been such a previous lesion; but that in many instances there is no previous lesion whatever. The conditions on which tuberculous infection in any given case appeared

to depend were, first, the number of the germs, and, second, the condition of the germs. Other things being equal, therefore, the larger the number of bacilli and the greater the activity of the virus, the stronger would be the chance of infection. Having referred to the question of the channel of infection, he said, in summing up, that the only factor necessary for the production of pulmonary phthisis was the bacillus tuberculosis or its spores.

One of the most positive and terse communications of the evening was the paper of Dr. J. West Roosevelt, on *The Relation of the Tubercle Bacillus to the Early Diagnosis and Prognosis of Phthisis*. In opening he spoke of the difficulties in the way of diagnosis which many cases presented, the responsibility of the physician, and the irreparable injury which might be done to a young man's prospects in life by the enunciation of a wrong opinion. If the bacillus were found in the sputum, all doubts would, of course, be removed. But suppose we do not find the bacillus, he went on to say, can we assert that phthisis does not exist? Decidedly not. It must be remembered that in phthisis we often have no tubercle which is so situated as to be connected with the air-passages, and it is quite possible for extensive tuberculous deposit to occur, and yet no bacilli be discharged. It is also possible for so much bronchial discharge to exist that the bacillus may be overlooked in the large quantity of expectoration. No one would, therefore, deny the existence of phthisis because the bacillus could not be found. Even though very many careful examinations be made and no bacilli be discovered, this evidence against the diagnosis of phthisis is slight; though, of course, the presence of bacilli would render such a diagnosis positive.

As seen in New York, he said, there were a number of cases of phthisis in which the lesion, until near the end, seemed to consist of the deposit of tubercles beginning in the upper lobes and gradually spreading and involving the lower. There were also some pleurisy and some bronchitis. Now, in these cases there was not much tendency for the tubercles to break down early in the disease. There being practically no pulmonary consolidation (nothing at first but a few scattered tubercular nodules), the physical signs were of little value. It was possible for this form of phthisis to progress very far and yet give no distinctive signs. Unfortunately, for the reason that scattered tubercles constituted the lesion and that these did not break down early and empty their bacilli into the bronchial secretion, the detection of the bacilli was frequently impossible at the very time when this would be of most value.

In another form of phthisis, together with the tubercle deposit, we had pneumonia, coagulation necrosis, marked bronchitis, etc., and practically this form, owing to the pulmonary consolidation,

gave signs earlier than the others. It also broke down over a greater extent of the lungs, and bacilli were frequently and abundantly discharged. It might be said that those cases presenting the greatest difficulties for diagnosis, not regarding the bacillus, presented also the greatest difficulties in finding the bacillus. In many of them it was not to be found at all, and the diagnosis had to be made from the physical signs.

As to the prognostic value of the bacillus, he thought it could hardly be said to have any. Patients going rapidly down hill would be found whose expectoration contained but few bacilli, and, on the other hand, large numbers of these might be found in the sputum of those whose disease was advancing but slowly, if at all. It was simply a question of the freedom with which cheesy matter was emptied into the bronchi. Strangely enough, there was a decided tendency for many to regard the bacilli discharged as a measure of the disease; as if they, and not the bacilli growing in the patient, did the harm. Hence we read of "diminution in the number of the bacilli" under varied treatments as a symptom of improvement. It might or might not be such a symptom. At best it was a most delusive one.

Watching for it, and laying stress upon it, he believed had done one great harm. It had given a longer life to the various so-called antiseptic methods of treatment; the word antiseptic being, here used, of course, as meaning destruction to bacillary life. "A strong solution of carbolic acid kills bacilli after some hours; therefore give very small doses of that agent (doses so small as to be, when diluted with a bulk of fluid equal to that of the blood, entirely harmless to the microbes), and thus cure phthisis." This was the real basis of reasoning for all such treatment; and how often had we heard in regard to each of the new antiseptic methods that "the cough, expectorations, and night-sweats improved, and the bacilli were reduced in numbers." To this should usually be added: "The patient died." Now the fact that the bacilli vary greatly in numbers from time to time had added somewhat to the apparent value of many different kinds of treatment. The time has come, he thought, for a protest to be made against the administration of poisons to unfortunate people in the so-called antiseptic treatment of phthisis. To do this, and to call the methods by which the particular poisons had so far been chosen, "scientific," was possibly to injure the patient, but certainly to exhibit a peculiar idea of what constitutes science. He explained that he would not for a moment be understood as objecting to the trial of any non-injurious treatment for phthisis; but he certainly did wish to protest against the giving of antiseptics tested as now, and calling it rational. While the complex body-cells were easier to kill than the more sim-

ply constructed bacilli, it did not seem very encouraging to try to kill the latter and yet leave the former untouched. It was probable that nourishing the phagocytes was better than trying to kill the bacilli. It was possible that empirically something may be found capable of acting as a specific bacillary poison, but no evidence had yet presented that such a substance exists, nor was it likely to be obtained by the present crude methods.

Dr. Roosevelt's conclusions were as follows:

1. The bacillus tuberculosis is of great positive value, but no negative value, in diagnosis.
2. In prognosis the bacillus is of but little value.

3. In both diagnosis and prognosis quite as much depends upon the careful study of the case as a whole as if there were no bacilli concerned in the production of the disease, except that a diagnosis is sometimes rendered positive, which would otherwise be doubtful, by finding the bacillus.

Prof. James Tyson, of the University of Pennsylvania, who had been invited to take part in the discussion, dwelt for some time on the difficulties which had attended the indisputable establishment of the proposition that the bacillus is the essential and only cause of tuberculosis. He then went on to say that attention could now be directed most profitably to the corollaries which grew out of this causal relation, and that the first evident deduction was that tuberculosis must be contagious. The contagiousness was so comparatively slight, however, that some explanation seemed necessary, and this explanation, he thought, would be found in the mode of dissemination, as shown by some recent observations of Cornet. This observer inoculated animals with sponge-scrappings from the walls of rooms occupied by phthisical patients. Large numbers of animals thus inoculated were found to be tuberculous, while the control experiments, made with sponge-scrappings from houses not inhabited by tuberculous patients, gave negative results. In no case was the dust of the walls infectious where sputum-cups were exclusively used to receive the expectorated matter, although such sputum abounded in bacilli. We thus learned that it is through the dried sputum whose bacillus-containing particles are disseminated in the air that the disease is spread; as was, indeed, originally suggested by Koch. Tuberculosis might be characterized as feebly or slightly contagious in the same way and for the same reason that typhoid fever was slightly contagious; because ordinarily the excreta are promptly removed, even if not disinfected, and it is only when they dry upon the linen, and thence become scattered through the air, that they enter the lungs or alimentary canal.

The same conditions also which intensified the contagion of the diseases long acknowledged to be contagious increased the operation of that of

phthisis. Thus, for instance, the disease was most frequent where people were crowded together, as in prisons, etc. Married people infected each other, and the members of healthy families might become infected one after another after removal to a house previously occupied by a tuberculous patient. In the same direction he pointed out some most valuable and laborious observations by Dr. Lawrence L. Flick, of Philadelphia, illustrated by a series of maps locating every death from tuberculosis in a single ward for twenty-five years, in which he showed that of the infected houses scarcely 10 per cent. are isolated—that is, have not an infected house next to them. About 23 per cent. of the infected houses, moreover, had had more than one case. Finally, through diagrams showing the distribution of small-pox, typhoid fever, diphtheria and scarlet fever, he showed that the groupings of phthisis are identical with those of contagious diseases.

In referring to the subject of the communication of tuberculosis through the alimentary canal he stated that while the general expression of the Paris Congress for the Study of Tuberculosis, held in 1888, was against the use of tubercular flesh, and especially tubercular milk, no absolute demonstration of the harmful effects of meat from tuberculous cattle seems to have been presented. Cagny, however, related a case in which tuberculous disease was caused in chickens by eating the sputa of a phthisical patient. In like manner, Mosler had reported the case of a patient who swallowed his own sputum in large quantities. Ten days after his first attack of cough diarrhoea and colic set in, and ten days later he died. The autopsy revealed tuberculosis of the lungs and intestine, but nowhere else in the body; and hence Mosler was inclined to refer tuberculosis of the intestine to swallowed sputum rather than to general infection, although he failed to produce intestinal tuberculosis in animals by feeding them with tuberculous sputum and lung tubercle.

Having referred to the possible transmission of tuberculosis by flies, as indicated by the observations of Spellman, Haushalter, and E. H. Hoffman, Dr. Tyson went on to say that the relation of the bacillus to heredity had as yet failed of a satisfactory explanation, and more particularly as regards congenital tuberculosis. The most probable explanation of the latter, he thought, was that it is passed from the blood of the mother to that of the foetus through the placenta. Such transfer, however, presupposed, of course, the presence of bacilli in the blood of the mother; and while Weichselbaum had succeeded in demonstrating tubercle bacilli in the blood, it had been very frequent. It had to be admitted, too, that although Landouzy and Martin have obtained positive results after the inoculation of animals with the placenta of phthisical patients, no tubercle bacilli were found in the products;

which might therefore have been pseudo-tuberculosis.

Another important corollary, he said, related to the tenacity of the life of the bacillus. Cadere and Mallet found that tuberculous matter, when dried and pulverized, is capable of transmitting tuberculosis 102 days after such preparation; but they concluded that virulence does not persist after from 30 to 70 days, unless special care is taken to preserve it. Schule and Fisher claimed that tuberculous matter may remain active at least six months, while Pietro asserted that well dried sputum may retain infectious properties for nine or ten months at a mean temperature of 77° F.

Dr. H. M. Biggs, of the Carnegie Laboratory, presented the specific nature of phthisis in a very clear and forcible manner. No fact in medicine, with the possible exception of the essential cause of anthrax, he said, was better established than the causal relation of the bacillus of Koch to tuberculosis. The evidence, he believed, answered very nearly indeed to the exactness of mathematical demonstration, and it seemed to him that the profession could not too soon do away with the notion, held by many even yet, that heredity and other causes were prime factors in the etiology of phthisis. There was one, and only one cause, and that was the tubercle bacillus. That these other factors had an influence no one could deny, but the effect of the was simply to reduce the normal power of resistance in the tissues. In order that infection should result it was necessary that a dose of bacilli should be taken into the system and that these should have the effect of overcoming the tissue resistance. Depressed vitality from any cause and antecedent pathological processes existing in the lungs would naturally facilitate this action of the bacilli.

He considered that the tubercle bacilli are capable of causing the disease without the assistance of any other factor, provided that a sufficiently large number of them are admitted to the system. Heredity meant, then, he said, not the transmission of a predisposition to tuberculosis, but that tuberculous parents transmit to their offspring organs which are easily acted on by such agents as the tubercle bacillus; in other words, organs which have a less resisting power than those of robust individuals. In such organs there was simply an absence of strength, and not the positive possession of unfavorable qualities. If these points were accepted, he said it followed, first, that phthisis pulmonalis is distinctly contagious; and secondly, that it is a distinctly preventable disease.

The great question that lay before us, therefore, was the prevention of tuberculosis, and he thought that, in trying to solve this problem, we could not too strongly insist upon the origin of the disease from a single cause. In the work of prevention all discharges from tuberculous patients should be

disinfected, and all tuberculous animals should be destroyed; and we could only hope to carry out such a work by educating the profession and the public in this belief that the disease is due to a single cause. Whenever tuberculosis occurred in animal or man, the fact ought to be distinctly recognized that it was invariably the result of tubercular disease existing in some antecedent case.

Dr. H. P. Loomis followed Dr. Biggs, and in the course of his remarks he stated that he had found that in no less than 60 per cent. of all patients dying at Bellevue Hospital there were old tubercular changes in the lungs; the disease having been recovered from. After the meeting one of the physicians present remarked that if this statement were true it would be a great deal better if those suffering from tuberculosis should pay no attention to the disease and not seek medical advice, since statistics showed that of all tuberculous patients who came under treatment only 10 per cent. recovered.

Dr. Trudeau, of Saranac Lake, in the Adirondack Mountains, who exhibited some interesting specimens, stated that he had found it possible to produce in animals any kind of phthisis that was known in the human subject by properly regulating, first, the quantity of virus employed; second, the site of inoculation; and third, the environment of the animal. Acute miliary tuberculosis, for instance, could be caused by inoculating the vein of the ear. The animal would die of the infectious disease in about twenty-five days, and an examination would show the presence of tubercles everywhere in the body. By injecting the virus into the apex of the lung, a condition would be produced in which fibrous tissue would be found to predominate over the tubercular.

Dr. W. H. Thomson read a paper on *The Influence of the Microbe Theory on the Treatment of Phthisis*, in which he said that he had never expected any specific treatment to be of permanent value in phthisis on account of the organic nature of the tubercle bacillus. As illustrating this, he said he had never seen a case of small-pox, measles, or other specific disease that was shortened a single day by the administration of an antiseptic or any other agent whatever. He did not know of anything that the farmer could use that would kill the weeds, but not the potatoes, in his field; and in like manner we could not expect to find any agent that would kill the tubercle bacillus in the body, and yet not do injury.

But, at the same time, he thought that Koch's great discovery would not be barren of practical results. Having spoken of the apparent interdependence of bacterial growths upon each other, he referred to the wide prevalence of the streptococcus pyogenes, and said that it had seemed to him that this organism might perhaps pave the way, as it were, for the tubercle bacillus, which without its aid possibly would not find a suitable soil

for its development. If this were so, he thought it was of the greatest importance, first, to check all suppurative processes in the lungs; second, to remove the pus; and third, to prevent putrefaction of pus. One of the best agents against supuration was creosote, and it might be employed both internally and by inhalation. He related two cases of phthisis with well-marked cavities in which permanent recovery followed the use of creosote, and said that while he had, of course, met with many cases in which this remedy did no good, he believed that, on the whole, it was of more efficacy than any other. One important indication was to cause, as far as possible, a limitation of the tuberculous process by promoting the power of resistance in the tissues.

Dr. B. F. Westbrook, of Brooklyn, thought that as a rule a skillful examiner could make the diagnosis of phthisis in any case where the microscopist could do so by means of the sputum. In cases of pleurisy at the apex of the lung, however, where it was not known whether tuberculosis originally existed or not, he believed the examination of the sputum would often prove of diagnostic value. A few cases were also met with in which patients with weak chests have some crackling at the apex which may be due either to tuberculosis trouble or to emphysema; and here, too, he thought the presence or absence of the bacillus might be of considerable value. As to the matter of prognosis, if in any case repeated examinations failed to reveal the presence of bacilli in the sputum, he said he would conclude that there was no tuberculosis present, and that the trouble was probably due to chronic interstitial pneumonia. The mere numerical quantity of bacilli found in any case was, in his opinion, of no value.

As regards the matter of treatment, he believed that the only influence which the discovery of Koch had thus far had upon this was pernicious, since it had resulted in the introduction of all sorts of mischievous methods. There could be no specific treatment unless we could discover a specific antidote. Antiseptic agents, however, might be of great service in the treatment of fetid bronchitis, in cleansing and disinfecting cavities and the bronchial tubes, and in fortifying the constitution of the patient.

Dr. F. P. Kinnicutt, who closed the discussion, said that some of the antiseptic remedies had an undoubted value in removing foci of irritation and rendering the tissue in a measure aseptic. They arrested fermentation and had a stimulating effect upon the vital processes; and it was no doubt to such effects that the benefit observed from the use of creosote was due.

In the recent centennial celebration in this city the New York County Medical Association was officially represented by its president, Dr. Charles S. Wood, who acted as one of the aids to Gen.

Daniel Butterfield, chief marshal of the great civic parade on May 1. When the head of the procession reached Madison Square it was halted, and the chosen representatives of about a hundred societies of various kinds, of which the Association was one, marched from their rendezvous near by and preceded the column in passing President Harrison. On arriving in front of the reviewing stand they were drawn up in line before it, and Mayor Grant presented to the President in the name and behalf of the civic, industrial, benevolent and educational organizations there represented, an address engraved upon parchment and inclosed in a beautiful silver box. Upon the address was inscribed the date of the organization and incorporation, the purposes and the signature of the president of each society. The delegates then passed to seats especially reserved for them on the grand stand, south of the President, and assisted in reviewing the parade. The Executive committee of the County Association has ordered that the handsome insignia worn by Dr. Wood on this occasion shall be framed and carefully preserved as a memorial of its participation in the centennial celebration.

P. B. P.

BOOK REVIEWS.

MEDICAL AND SURGICAL MONOGRAPHS. May Number. New York: Wm. Wood & Co.

There is published in the May number two monographs: The first upon "The Preventive Treatment of Calculous Disease and the Use of Solvent Remedies," by Sir Henry Thompson, F.R.C.S., M.B. The author states that we have the power to check the production of calculous matter at almost any stage of the complaint, and can almost certainly render its formation impossible if proper treatment be adopted. The dietetic treatment, upon which success largely depends, and the value of mineral waters are then fully discussed. The best, however, that modern science has done toward the solution of uric acid concretions, which are the basis of more than 90 per cent. of all calculi, is founded upon the use of potassium carbonate and the author unites with Sir William Roberts in agreeing that this is the most powerful solvent known, much better than either salts of sodium or lithium. Finally, it is necessary to admit that no evidence has yet been produced that the complete solution of a stone in the bladder has been effected by any alkaline agent whatever. The probabilities are in favor of the solution of small stones, but if large their solution is quite impossible.

The remainder of the volume, in fact, its greater portion, is devoted to "Sprains and their Consequences," by C. W. Mansell Moullin, M.A.,

M.D., F.R.C.S. The subject is very fully dealt with in some sixteen chapters, and the treatment is given in elaborate detail. The importance of the subject and the able treatment it has received in the hands of the author serve to recommend it.

THE INSANE IN FOREIGN COUNTRIES. By WILLIAM P. LETCHWORTH, President of the New York State Board of Charities. New York and London: G. P. Putnam's Sons. 1889.

This is a large octavo volume of 374 pages, containing numerous and valuable illustrations. The author spent seven months in diligent personal examination of the various kinds of provision made for the insane poor in England, Scotland, Ireland, Sweden, Denmark, France, Germany and other Continental countries, and has given the results of his investigations in this volume, preceded by a very interesting retrospective introductory chapter. Every person interested in the welfare of the insane poor, and the provisions made for their protection and support in different countries, will find this a most interesting and valuable volume; and equally so whether such person be a physician or not.

MISCELLANY.

SCIENTIFIC USES OF THE EIFFEL TOWER.—M. Janssen, of the Institute of France, is of opinion that the Eiffel Tower will have many scientific uses. One of the greatest difficulties of meteorological observations is the disturbing influences of the station of observation itself. How, for example, can a true deviation of the wind be observed if a purely local obstacle causes it to deviate? And how can a true temperature of the air be determined by a thermometer influenced by radiation from surrounding objects? Thus, the meteorological elements of great centers of habitation have to be taken outside those centers, and at a certain height above the soil. The Tower, since it rises to a great height, and from the nature of its construction does not modify in any way the meteorological elements to be observed, will get over this difficulty. A height of 300 yards is in itself not negligible quantity from the point of view of rainfall, temperature, and pressure, but these circumstances give all the more interest to the institution of comparative experiments on variations due to altitude; the electrical interchanges between the soil and the atmosphere can also be studied to advantage. Special arrangements can be made for avoiding accidents, and results of great interest should be obtained. M. Janssen recommends also the institution of a service of meteorological photography. A good series of photographs would give forms, movements, modifications which the clouds and atmospheric conditions undergo from sunrise to sunset. Thus a history of the skies would be written on a radius not hitherto dealt with. In physical astronomy various other observations might be taken, especially in relation to the study of telluric spectrum. M. Eiffel announces that three laboratories have already been arranged on the Tower. One will be devoted to astronomy, and the second will contain registering apparatus from the central bureau of meteorology, and will be devoted to physics and meteorology. MM. Mascart and Cornu expect to draw great advantages from its use in the study of the atmosphere. The second is

reserved for biology and micrographic study of the air, to be organized by M. Henocque. M. Cailletet is arranging a great mercurial monometer, with which he expects to obtain pressure as high as 400 atmospheres.—*British Medical Journal*.

McLEAN COUNTY MEDICAL SOCIETY.—The regular monthly meeting of the McLean County Medical Society was held at the office of Drs. Darragh & Corley, on Monday, May 6th, at 2:30 P.M. There were present, Drs. Rhoda Galloway, C. F. Vandervoort, M. D. Hull, E. P. G. Holderness, N. F. Jordan, J. L. White, Wm. Hill, A. T. Darragh, H. Parkhurst, C. J. Corley, Secretary, G. M. Smith, S. T. Anderson, F. J. Parkhurst, C. Reedy, E. Mammen, F. J. Welch and L. A. Burr.

Dr. J. L. White, one of the Committee who went to Springfield in the interest of the Medical Practice Act, stated that in his opinion the majority of the Legislature were in favor of the above Act, and, furthermore, there was not the least danger of the section being stricken out.

Dr. Darragh reported a case of a young lady attending school in Indiana who had malignant scarlatina and when she was convalescing wrote home, and in a few days after some of the family were stricken with the above disease, supposed to have been produced by the letter paper. The following were appointed delegates to the State Medical Society meeting at Jacksonville, Ill.: Drs. F. J. Parkhurst and E. Mammen. To the American Medical Association meeting at Newport, R. I., Drs. Hull and Covey. Dr. Anderson then read an essay on "The Quinine Hobby." It was a witty and interesting one and received an attentive listening from all present.

LETTERS RECEIVED.

Dr. J. H. Etheridge, Chicago; Dr. John Barney, Dunkirk, N. Y.; Dr. C. M. Daniels, Buffalo, N. Y.; C. C. Purington, Boone, Ia.; Dr. J. S. Dorsey-Cullen, Richmond, Va.; Dr. W. H. Dunlop, Syracuse, N. Y.; W. F. Snorgrass, Excelsior, Mo.; J. A. T. Bernays, Minneapolis, Minn.; Dr. A. F. A. King, Washington; J. H. Bates, New York; Dr. Stanford E. Chaillé, New Orleans, La.; A. E. Walesby, Louisville, Ky.; Dauchy & Co., New York; W. P. Cleary, New York; I. Haldenstein, New York; Dr. J. H. Eldredge, East Greenwich, R. I.; Dr. W. D. De Long, Pikesville, Pa.; Dr. C. C. Fite, Knoxville, Tenn.; Dr. J. M. Dunham, Columbus, O.; Dr. Arthur J. Hall, Washington; Dr. J. V. Schofield, Harris City, Ind.; Dr. C. H. Franklin, Union Springs, Ala.; Dr. R. A. Kinloch, Charleston, S. C.; B. Pulskamp, Washington; Dr. T. E. Potter, St. Joseph, Mo.; M. Brewer, Monmouth, Ill.; Dr. J. G. Weaver, Strasburg, Pa.; Lea Bros. & Co., Philadelphia; T. A. McKimball, Washington; Dr. F. Dowling, Cincinnati; Dr. E. P. Sale, Memphis, Tenn.; Nugent, Brown & Co., Fargo, Dak.; Dr. Willis G. Tucker, Albany, N. Y.; Dr. C. P. Thayer, Boston, Mass.; Dr. C. Thompson, New York; Dr. K. von Ruck, Asheville, N. C.; Dr. A. L. Hummel, Philadelphia; Dr. Geo. F. Cook, Oxford, O.; Dr. Samuel N. Nelson, Boston; Canton Surgical and Dental Chair Co., Canton, O.; Emma B. Orcutt, Hardwick, Mass.; Dr. E. J. Sheron, Sing Sing, N. Y.; Dr. C. E. McClary, Syracuse, N. Y.; Dr. Frank Billings, Chicago; Dr. C. Brown, Adrian, Ill.; Dr. W. H. Forbes, Richmond Hill, N. Y.; Dr. Wm. E. Quine, Dr. Chas. T. Parkes, Dr. W. E. Casselberry, Chicago; Dr. Robt. T. Edes, Washington; Dr. Joseph Eastman, Indianapolis; J. T. Petty, Washington; Dr. J. S. Riggs, Redland, Cal.; Dr. W. Franklin Coleman, Chicago.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 4, 1889, to May 10, 1889.

By direction of the acting Secretary of War, Capt. F. C.

Ainsworth, Asst. Surgeon U. S. Army, will proceed to Albany, N. Y., on business connected with the Medical Department. Par. 7, S. O. 105, A. G. O., May 7, 1889.

Capt. Walter W. R. Fisher, Asst. Surgeon U. S. Army, is hereby granted leave of absence for one month. Par. 1, S. O. 30, Hdqrs. Dept. of California, San Francisco, Cal., April 21, 1889.

Capt. D. M. Appel, Asst. Surgeon, relieved from duty at Fort Sill, Ind. Ter., and ordered to Ft. Bliss, Tex.

Capt. S. G. Cowdrey, Asst. Surgeon, relieved from duty at Ft. Bliss, Tex., and ordered to Ft. Marcy, N. M.

Capt. Jas. A. Finley, Asst. Surgeon, relieved from duty at Ft. Assiniboine, M. T., and ordered to Ft. Totten, Dak.

Capt. Aug. A. DeLoffre, Asst. Surgeon, relieved from duty at Ft. Totten, Dak., and ordered to Columbus Bks., O.

Capt. B. D. Taylor, Asst. Surgeon, relieved from duty at Columbus Bks., O., and ordered to Ft. Sill, I. T. Par. 25, S. O. 104, A. G. O., Washington, May 6, 1889.

By direction of the acting Secretary of War, First Lieut. William P. Kendall, Asst. Surgeon, will be relieved from duty in the Dept. of California, after he shall have complied with the requirements of par. 2, S. O. 29, A. G. O., April 24, 1889, from these headquarters, and will then proceed to Ft. D. A. Russell, Wyo., for duty at that station. Par. 28, S. O. 104, A. G. O., May 6, 1889.

By direction of the Secretary of War, Capt. Paul R. Brown, Asst. Surgeon, is relieved from further duty in the Dept. of the Platte, and will proceed to Ft. Thomas, Ariz., and report in person to the commanding officer of that post for duty, and by letter to the commanding officer Dept. of Ariz. Par. 10, S. O. 105, A. G. O., May 7, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending May 11, 1889.

Medical Inspector Grove S. Beardsley, detached from the "Brooklyn," proceed home and wait orders.
P. A. Surgeon P. A. Lovering, detached from the "Brooklyn," proceed home and wait orders.
Asst. Surgeon Oliver D. Norton, detached from the "Brooklyn," proceed home and wait orders.
Surgeon J. A. Hawke, detached from the "Essex," proceed home and wait orders.
Asst. Surgeon C. F. Stokes, detached from the "Minnesota" and to the "Iroquois."
Surgeon John F. Bransford, orders to the "Iroquois" revoked, resignation accepted, to take effect May 4, 1890, with leave of absence granted to that date, with permission to leave the United States.

STATE MEDICAL ASSOCIATION MEETINGS IN 1889.

STATE.	SECRETARY'S NAME AND ADDRESS.	TIME AND PLACE.
Arkansas.	L. P. Gibson, Little Rock.	Pine Bluff, May 25.
Colorado.	H. W. McLaughlin, Denver.	Denver, June 18.
Connecticut.	N. E. Wordin, Bridgeport.	Hartford, May 22.
Dakota.	H. E. McNutt, Aberdeen.	Mitchell, June 20.
Delaware.	J. E. Ellegood, Laurel.	Dover, June 11.
Illinois.	D. W. Graham, Chicago.	Jacksonville, May 21.
Indiana.	E. S. Elder, Indianapolis.	Indianapolis, May 21.
Maine.	C. D. Smith, Portland.	Portland, June 11.
Massachusetts.	F. W. Goss, Boston.	Boston, June 11.
Minnesota.	C. B. Wetherle, St. Paul.	Minneapolis, June 27.
Missouri.	J. C. Muthall, St. Louis.	Springfield, May 21.
Nebraska.	A. S. v. Mansfelde, Ashland.	Kearney, May 21.
N. Hampshire.	G. P. Conn, Concord.	Concord, June 18.
New Jersey.	Wm. Pierson, Orange.	Spring Lake, June 4.
New York.	E. D. Ferguson, Troy.	New York, Sept. 25.
Ohio.	G. A. Collamore, Toledo.	Youngstown, May 22.
Oregon.	C. C. Strong, Portland.	Portland, June 11.
Pennsylvania.	W. B. Atkinson, Philadelphia.	Pittsburgh, June 4.
Rhode Island.	G. D. Hershey, Providence.	Providence, June 13.
Vermont.	D. C. Hawley, Burlington.	Brattleboro, June 27.
Virginia.	L. B. Edwards, Richmond.	Burlington, Oct. 10.
West Virginia.	J. L. Fullerton, Charlestown.	Roanoke, Aug. or Sept.
		W. Sulphur Springs.

THE

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, MAY 25, 1889.

No. 21.

LECTURES.

DUODENAL AND GASTRIC ULCERS.

A Clinical Lecture delivered at the Hospital of the University of Pennsylvania.

BY WILLIAM PEPPER, M.D., LL.D.,

PROVOST AND PROFESSOR OF THE THEORY AND PRACTICE OF
MEDICINE, UNIVERSITY OF PENNSYLVANIA.

I cannot altogether agree with those who think that, as regards the frequency of gastric ulcer, it is much more often suspected when it does not exist, than overlooked when actually present. But all are agreed as to the rarity of duodenal ulcers. Of this latter, it is doubtful if more than 70 authenticated cases are on record; while gastric ulcers, either cicatrized or open, are found in about 5 per cent. of persons dying from all causes. It may be very difficult to decide whether an ulcer which is believed to exist is gastric or duodenal in position. And this fact, coupled with the frequency of these ulcers, their dangerous character, and the great importance of proper treatment, leads me to report to you some recent cases.

It is true that you can diagnose gastric ulcer with confidence in cases attended with characteristic paroxysmal circumscribed epigastric pains extending through the back, coming on after eating, and disappearing only when the stomach is emptied by vomiting; with localized tenderness; with frequent vomiting, hyperacidity of the contents of the stomach, and with recurring hæmorrhages of bright blood in varying amount, with or without bloody discharges from the bowels. But it must be remembered that such ulcers may be latent and cause only slight, if any, symptoms until sudden and, as I have more than once seen, immediately fatal hæmorrhage, or else sudden perforation occurs. Or, indeed, the ulcer may be unexpectedly found at the autopsy of a case in which no significant symptoms had been present. Many cases are on record illustrating these statements. The same may be said of the duodenal ulcer; and I am reminded of the following case, which I saw but once, as it was sent to me, in 1881, by Dr. W. K. Hull, of Williamsport, for examination.

Case 1.—Duodenal Ulcer; Obscure Symptoms, Death from Perforation and General Peritonitis.

Mr. A. G., æt. 43, a dry-goods merchant of excellent personal habits, had for six years been complaining of occasional attacks of indigestion and pain (not of much severity) over the right side of the abdomen. His general health had not suffered much, though he had lost flesh moderately. His height was 5 ft. 9 in.; his weight 126 lbs.; he was of a light, spare build. He knew of no cause for his trouble, which I regarded as duodenal catarrh with hepatic congestion. He had never suffered a burn of any severity; nor any injury to that part of his body. He had been in the habit of eating rapidly without properly chewing the food. He took frequent Turkish baths, but only since the appearance of symptoms. He had never had jaundice. The urine was at times dark, but when I examined him it contained neither albumen nor sugar. There was no vomiting; no intestinal hæmorrhage; no local tenderness. The appetite was rather craving; the tongue but slightly coated; the bowels sluggish; the area of liver dulness slightly enlarged. The lungs and heart were normal; there was no marked atheroma of the superficial arteries.

I recommended the abandonment of Turkish baths; the constant use of a flannel belt around the body; a carefully restricted diet; and alternate courses of nitrate of silver and of iron, with belladonna and quinine.

I saw him on January 22. I heard from him in ten days that he was doing very well. On February 12, after a short and gentle ride on horseback, he was seized with atrocious pain in the upper part of the abdomen, followed by immediate collapse and rapidly fatal general peritonitis. The autopsy revealed an ulcer of the duodenum, which had perforated. It was seated on the anterior wall of the horizontal portion, about an inch from the pylorus. It was $\frac{3}{8}$ inch in diameter, with sharp punched-out edges. There was no ulcer in the stomach.

I fear that it must be admitted that in this case it was impossible to make a correct diagnosis, as all the symptoms seemed adequately explained by the duodenal catarrh.

The next two cases I shall report were attended, on the other hand, with marked and alarming symptoms. They are specially interesting from their severity; from some unusual features; from the illustration they afford of the differential diagnosis of gastric and duodenal ulcer; and from their termination in recovery.

Case 2.—Gastric Ulcer; Gastralgie Pains; frequent Vomiting; Hæmorrhage; Septic Parotitis; Recovery after Desperate Illness.

Mrs. X., æt. 39, was seen in consultation with Dr. T. V. Crandall. She had been suffering for many months with uterine trouble, and had been subjected to an operation for laceration of the cervix, following which there was a prolonged state of poor nutrition and neurasthenia. Her vitality and circulation were greatly depressed. She then suffered for three months from severe paroxysms of pain of gastralgie character, recurring frequently and irregularly. There was no vomiting, but progressive decrease in power of taking and digesting food, with quite rapid loss of flesh and color. There was also tenderness over the stomach. At the close of this time vomiting began, and almost at once became very frequent and proved uncontrollable by ordinary remedies. I saw her at this time. She was immediately put to bed, upon an absolute milk diet, with repeated small blisters over the stomach, and with minute doses of nitrate of silver internally. Rectal enemas were used from the first. The vomiting was not, however, controlled either by the silver nitrate, or by any other remedy that was used; opium by the rectum was required to relieve pain and to secure rest, but it produced no good effect upon the vomiting. It was also necessary to use hypodermic injections of morphia and atropia quite frequently. The tongue became parched and brown and deeply fissured; the anæmia grew intense, and there was occasionally oozing of blood from the nose, and from the gums. Vomiting of small quantities of bright, fresh blood occurred repeatedly. At the close of ten days slight febrile action set up, the temperature rising to about 101° at night. She became so emaciated and exhausted, that it seemed that death was imminent. She was then attacked with parotitis, undoubtedly septic in character, first upon one side and then upon the other. Fortunately this ended in resolution. All internal medication was abandoned, and for many days no attempt was made to administer food by the mouth. She was anointed assiduously with sweet oil, and for four weeks was maintained exclusively by rectal enemas. Veratria ointment was used externally, in conjunction with morphia hypodermically, and opium by the rectum to control suffering. Despite her desperate condition she began to im-

prove; vomiting grew less frequent, and blood ceased to be ejected. The fever subsided. As resolution of the parotitis advanced, she became able to bear teaspoonful doses of skim milk. This was cautiously increased, and she was kept upon an absolute milk diet for about three months. She was then able to be lifted from bed, and moved carefully to the seashore. After seven weeks of illness, recovery was complete, but was marked by protracted and obstinate constipation with troublesome rectal fissure.

Case 3.—Ulcer, Probably Duodenal; Gastralgie Pains; Persistent Vomiting; Severe Repeated Hæmorrhages altogether Intestinal; Circumscribed Tumor; Recovery after Desperate Illness.

Mrs. P., æt. 38. Was seen in consultation with Dr. H. A. M. Smith, of Gloucester City, N. J. She had enjoyed general good health, but during the autumn of 1888, had been overtaxed and worried greatly in connection with business affairs. She was attacked December 14, with severe gastralgie pain, which recurred regularly every afternoon at about the same hour. Vomiting began on December 29, and at once became frequent and was attended with marked exhaustion, so that she took to bed on January 1, 1889. In spite of various remedies and careful regulation of diet, the vomiting persisted. It presented itself rather as a frequent raising of small quantities of dark colored mucus, which at times had a purulent appearance. There were rapidly progressive emaciation, weakness and anæmia. On February 5 she had a large hæmorrhage from the intestine. The blood was dark, but not offensive. This caused extreme debility. Between that date and February 14, there was continued discharge of blood from the bowel, including six large hæmorrhages. There was not a single drop of blood vomited.

I saw her first on February 5. She was profoundly anæmic, and partially collapsed. During the ensuing ten days it seemed scarcely possible that she should survive. Examination showed tenderness to the right of the median line, and there was a distinct circumscribed induration below the lower edge of the right ribs, corresponding to the position of the duodenum. This could be outlined as a painful lump of about two inches in diameter. There was no jaundice at any time. She continued to raise frequently small amounts of dark mucus. There was no melæna after Feb. 14. Fortunately the rectum continued retentive, and the nutritious enemas were evidently absorbed. She remained in a desperate condition for nearly three weeks, and even then her improvement was so slight and gradual, that her recovery seemed doubtful for some time longer. The lump described above gradually decreased in

size, and now, May 1, is no longer perceptible. She continued to eject mucus in decreasing amounts until early in April, since when it has stopped entirely. The stomach rapidly regained its digestive power, and she is now able to eat quite freely and without any distress, meat, vegetables, bread and butter. All is well digested, and the bowels are moved daily with a healthy stool. As soon as she sat up, and her legs became pendent, she suffered very severely from numbness and anæsthesia, with a distressing sense of restlessness in them; there was no cedema. This has gradually disappeared under the use of veratria ointment with bandaging, and she is now able to walk about her room quite freely. In the treatment of this interesting case, rectal injections were used from February 1, until the last week in March. They occasioned no special inconvenience, and on no occasion did they induce an evacuation. For two weeks prior to the first hæmorrhage no nourishment whatever was retained. Reed and Carnrick's liquid peptonoids was then administered in small and frequently repeated doses. It proved acceptable and for some time was the chief reliance in feeding her, and she still continues its use. The rectal injections were given every four hours, and consisted of 8 ounces of peptonized milk, and of peptonized beef-tea alternately. Nitrate of silver was ordered on February 6, and its use was continued until 16 grains had been taken, grain $\frac{1}{4}$ t.d. being used. She then took oxalate of cerium grain $1\frac{1}{2}$ four times a day for two weeks, and then resumed the nitrate of silver in small doses, $\frac{1}{16}$ t.d., which has been continued until the present date. Her complete recovery now seems assured.

It cannot be doubted that ulcer existed in each of these cases, as severe recurring pain, tenderness, vomiting, and finally hæmorrhage, were present. The interesting question arises whether, in Case 3, the position of the ulcer was gastric or duodenal. It is evident that we cannot place much reliance upon the location or character of the pains. In some cases of gastric ulcer there is severe paroxysmal pain strictly localized in a circumscribed spot in the epigastrium, coming on soon after eating, increased by pressure, and disappearing as soon as the stomach is relieved of its contents. But there are many cases, of which Cases 2 and 3 are good examples, where the paroxysms of pain assume the usual diffuse gastralgic type. It is comparatively rare that there exists such definite localized pain as will enable us to determine accurately the site of the ulcer. Nor can it be said, as will be shown in Case 4, below reported, that the character or frequency of the vomiting is conclusive. Vomiting may be absent from first to last, in either gastric or duodenal ulcer. This is, to be sure, rare. It is the

rule more constantly in gastric than in duodenal ulcer that vomiting occurs repeatedly and soon after the ingestion of food. The argument is vitiated by the impossibility of determining the amount of coexistent gastric catarrh. In all the above cases this was present in marked degree; and especially in Case 3 did the character of the ejecta indicate that the vomiting was chiefly due to catarrh of the mucous membrane.

Not even when hæmorrhage occurs can we always decide. Still, it is a general rule that, in gastric ulcer, some of the effused blood—unless it escapes very slowly and all passes into the intestine, is vomited; and that on the other hand, in duodenal ulcer, unless the blood escapes very rapidly, so as to overcome the pyloric resistance, or unless the ulcer is seated very close to the pylorus and is accompanied with pyloric incompetence, the blood is discharged by stool. Case 4 will illustrate the latter statement; and Case 3, judged by this rule, would seem to be also one of duodenal ulcer. There are too many exceptions to permit a dogmatic assertion; yet here this view is confirmed by the existence of a small but distinct tumor in the duodenal region. It is important to remark that, though not a common symptom, tumor may be present in simple ulcer, either gastric or duodenal, and more frequently in the latter. The tumor is due to peritoneal exudation and adhesions, associated, in old cases, with thickening of all the tissues involved.

Even when no thickening or swelling can be detected by palpation, it is common enough to find a circumscribed spot of tenderness on pressure, which may be attributed to the sensitive state of the peritoneum outside the base of the ulcer, and which therefore may serve, when present, as a guide to the position of the ulcer. Great care is required to avoid being misled by mere epigastric hyperæsthesia, which is so common; and by tenderness of the nerve points in the abdominal walls. The position of the small tender swelling in Case 3 indicated that it was due to local peritonitis about the first portion of the duodenum; and the lesions in Case 4 showed clearly that there probably had been a distinct sense of resistance and thickening, if not of actual tumor, in the same region. Upon the whole the evidence seems to indicate that the ulcer in Case 3 was in the duodenum. There had been no severe pain—but this is merely of negative value; though it is far more usual to have recurring spells of varying intensity, as in Cases 1 and 4. There had been no jaundice, which occurs, as would be expected, in some cases of duodenal ulcer, from occlusion of the bile duct from extension of catarrh, or from thickening of the duodenal tissues. But this symptom is often absent, as in Cases 1 and 4. It should be noted also that the restoration of the tone and activity of the stomach was, in Case 3, more prompt and complete than in

seen ordinarily in cases of gastric ulcer ending in recovery. Before leaving these cases, the fever in Case 2 should be carefully noted. Simple ulcer of the stomach or duodenum is not often attended with fever. Still, this may develop from the occurrence of local peritonitis; or it may be septic, as it apparently was in this case. The complicating parotitis confirms this. The fever which occurred during the last few days of life in Case 4 was too brief and depended upon too many factors to have any special significance. The case is, however, full of clinical and pathological interest.

Case 4.—*Duodenal Ulcer; Gastric Catarrh of long Standing; Persistent Vomiting; Gastralgic Pains; Repeated Copious Discharges of blood by Mouth and Rectum, followed by Death from Sepsis and Exhaustion.*

I was called to see Mr. F. on the morning of Saturday, March 2, immediately after an enormous hæmorrhage from the stomach, which had been followed by almost fatal collapse. He was 32 years old, and a man of fine physique, who had formerly for many years indulged excessively in athletic sports. It was believed by many that he had often overtaxed himself. He had also been careless in his habits of living, especially in regard to his meals, which were irregular, and eaten hastily. He had used wine freely. He had never met with any serious accident, nor received any severe burn. For fully five years he had suffered with violent gastralgic attacks, recurring frequently and irregularly. The pain was referred to the epigastrium; not rarely pressure seemed to afford relief. His spells of pain were not brought on directly by food; and he had learnt by experience that the rapid drinking of large quantities of cold milk would afford temporary relief. It was clear that gastric catarrh had long existed. Vomiting became a symptom three or four years ago, and had continued quite frequent. It would usually occur in the morning, when he would bring up without much effort considerable amounts of mucus and acid liquid. During the day, however, he would not infrequently raise small quantities of liquid, so acid that it would bite the mouth. There had never been any jaundice. Local tenderness was not complained of, but there was often distressing abdominal distension. He had been under the treatment of several physicians, but had derived no special advantage from any remedies. Most relief was obtained from restricted diet largely composed of milk. Noting this, he had continued to use milk in large quantities, especially as excessive thirst was another prominent and distressing symptom in the case. He also ate a considerable amount of solid food, while at

the same time he drank as much as eight quarts of milk in twenty-four hours, taking it for the most part very cold, and in very large draughts. At times his thirst was so intense that he would raise the pitcher to his lips and drink as much as a quart at a single pull. He lost flesh moderately; had a bad color; and began to tire more readily. There had never been any blood vomited until the sudden large hæmorrhage above mentioned. He was at his office desk when this occurred, and fell upon the floor in syncope from the shock. The amount of blood which escaped cannot be estimated accurately, but an experienced physician who saw him immediately afterward says it was certainly over a quart. I saw him for the first time two hours after the hæmorrhage. He was deathly pale, with a miserably small and running pulse; and was complaining bitterly of intense thirst. There was no vomiting; the bowels had not been moved; the belly was moderately distended. He had taken a large dose of Monsell's solution. Nutritious and stimulating enemata were given. Digitalis was injected under the skin; smaller doses of the astringent were continued internally. He reacted gradually through the day, and by night seemed much better; but early on Sunday morning became restless and distressed, and soon had another enormous discharge of blood from the stomach. This again was certainly over a quart, and was soon followed by a large discharge of black tarry blood from the bowel. Alarming collapse again ensued. Monsell's solution was repeated; a bag filled with cracked ice was bound tightly upon the epigastrium; hypodermics of ether and digitalis were administered. He reacted imperfectly toward evening. No further hæmorrhage occurred. But during Monday he sank in spite of all efforts, and at 1 o'clock Tuesday morning, in consultation with Dr. J. William White and Dr. Judson Daland (whom I had placed in constant attendance upon the case), it was decided to transfuse. Dr. White injected into the left median basilic vein 32 oz. of hot saline solution, composed of sodium chloride 5ij; potassium chloride gr. xij; sodium phosphate gr. vi; sodium carbonate 5ij; alcohol 3ss; distilled water, q. s. ad Oij. The temperature of the liquid injected was 110° F.

The patient's condition was desperate when the injection was given. So exsanguine was he that when the vein was opened, it lay collapsed on the grooved director with not even an oozing of blood. Within a few minutes after the injection, blood began to flow from the distal part of the vein and it soon became necessary to ligate it. Its immediate effects were gratifying, and were especially marked upon the pulse, which became slower, stronger and fuller. His thirst was constant and intense. The transfusion did not help it. The good influence of the trans-

¹ This is the same case which was reported partially in the Medical and Surgical Reporter for April 20, 1889.

fusion did not last many hours, and, in fact, its effect was so transient that at no time until the occurrence of death upon the following Saturday, March 9, did we feel encouraged to repeat it. The stomach continued retentive. The patient's demands for liquids were incessant and imperative. They were resisted with difficulty, and only small quantities of milk and lime water and of a mixture of one part of champagne with two of Apollinaris water (kept frozen in an ice-cream freezer), were given alternately. Rectal enemas of peptonized liquids were given at intervals of four hours. The rectum proved unusually tolerant. It appeared probable that all the enemas were absorbed, although from time to time large quantities of horribly offensive decomposing blood were discharged from the upper bowel. Listerine was added to the enemas as a disinfectant. The medication was exclusively by hypodermic injection. Morphia, atropia, digitalis and ether were used with great discretion and with excellent result by Dr. Daland, according to the indications from hour to hour. On Wednesday, March 6, the temperature began to rise, and on Thursday and Friday it ranged from $101^{\circ}.5$ to $102^{\circ}.5$. It sank again on Saturday prior to death. No local cause for the fever could be determined; it seemed chiefly septic, though intestinal irritation played a part. The pulse continued extremely small and weak, and rapid.

Auscultation showed a distinct systolic murmur, heard over the sternum. This was regarded as at least in part organic, and due to disease of the aortic valves. The urine was examined several times after Tuesday, the 5th. It contained a very small amount of albumen; no sugar. There were a few leucocytes, but not sufficient to account for the albumen. There were no tube casts or blood. Death occurred gradually from exhaustion and heart failure.

Autopsy showed moderate enlargement of the heart. There were short fibroid vegetations on the free surface of the aortic valves. No other cardiac changes were present. The lungs were normal. The diaphragm was unusually thick and powerful. The spleen and pancreas were normal. The kidneys were very large; there were two small retention cysts on the surface, but no serious organic change. The liver was enlarged, weighing $4\frac{1}{2}$ lbs. The gall bladder was distended with 5 ozs. of dark bile; the bile ducts were normal. The stomach was greatly dilated, its capacity being over 3 quarts; its walls were thickened, and the mucous membrane showed evidences of chronic catarrhal inflammation. No ulcer or cicatrices were found. The duodenum was tightly adherent by old and firm adhesions to the liver, the gall bladder, and adjoining parts. It was greatly distended and its walls were softened, so that they readily broke upon traction. Upon its anterior face, about $\frac{1}{2}$ inch from the py-

lorus, there was a large irregularly round ulcer, with a diameter of almost 2 inches. The tissue of the duodenal wall at this point was much thickened and fibroid. About the centre of the ulcer the pancreatico-duodenal artery was ulcerated through, each portion of the vessel containing a soft thrombus. The ulcer was shallow, with slightly terraced edges. At about the beginning of the ileum there was a small fibroid growth projecting into the bowel. The stomach and small intestines contained no blood, but, in spite of the frequent and large bloody discharges during five or six days, the colon still contained a large amount of black fecal matter and of decomposing blood. It is evident, therefore, that at the time of the discharge of blood by vomiting, there was also an enormous amount of blood which passed down into the bowel.

There are many points of interest in this case which, for want of space, cannot be considered. Gastric catarrh had lasted so long that the patient had become accustomed to symptoms which should have caused constant alarm. The ulcer seems never to have been suspected by any of the numerous physicians he had consulted, and it is, of course, idle to speculate as to its duration, or as to whether it might have been recognized if the case had been studied carefully with suspicion alive, as it should always be where recurring pain and vomiting occur. His straight abdominal muscles were enormously developed, but the lesions about the duodenum indicated that, with proper care, the local thickening and hardening might have been detected.

All of these cases illustrate the difficulty of the treatment of simple ulcer of the stomach or duodenum. It is clear that, whenever suspicion is aroused as to the existence of ulcer, treatment must be prompt, rigid and persistent. Even when symptoms are mild, the gravest danger is lurking in the case. Taken thus, most cases recover. Strict rest; rigidly regulated feeding; full courses of nitrate of silver, alternating with oxalate of cerium, with bismuth or with copper, seem the most important elements of treatment. Careful attention to coexisting gastric catarrh by diet, by mild mineral waters, or even by lavage, may be demanded. Complications and accidents must be met promptly. Even the gravest cases may terminate favorably, after recovery seeming wellnigh impossible; so that the prognosis must not be a hopeless one as long as life lasts. The disease affords a good field for, and at times most imperatively demands, judicious hypodermic medication and rectal alimentation. The value of the latter cannot be exaggerated. In very bad cases, it may be associated with systematic inunction, and, as shown in Cases 2 and 3, life may be thus sustained for long periods, until happily the progress of cicatrization permits the resumption of feeding by the mouth.

THE TREATMENT OF ASTHMA.

Portion of a Lecture delivered in the Regular Course of 1888-89.

BY N. S. DAVIS, JR., A.M., M.D.,

PROFESSOR OF PRINCIPLES AND PRACTICE OF MEDICINE IN THE CHICAGO MEDICAL COLLEGE, PHYSICIAN TO MERCY HOSPITAL, ETC.

For the relief of asthma an almost countless number of drugs have been suggested and tried. It is not my purpose even to enumerate these, but to call attention to those that are to-day most frequently employed with success and to those with which I have had personal experience. Treatment of asthma is prophylactic and also is addressed to the immediate relief of the dyspnoea. In order to understand the mode of action of drugs in asthma, it is necessary to keep in mind its causes and the mechanisms within the body that are called into play in producing the phenomena of the disease. It is true that the bronchial tubes are congested during the dyspnoeic attacks, but it is not probable that this is the cause of the difficulty of breathing. A true spasm of the bronchioles constitutes the essential change. This spasm is produced by contraction of the muscular tissue in the bronchial wall when excited by the nerves supplied to it. The initial irritation of the nervous system arises in only a moderate proportion of all cases within the bronchial tubes. In some cases of bronchitis, and in some cases of uncompensated heart disease with passive engorgement of the bronchial vessels the afferent nerves of the bronchi are irritated, and thus reflexly the efferent nerves and finally the bronchial muscles are excited. Immediate irritation of the efferent nerves may be the cause of spasm of the bronchi in these cases, although the action of drugs points to a reflex cause. More frequently the initial irritation is in some distant organ, whence reflexly the muscular nerves of the bronchi are excited. A common illustration of this mode of origin of bronchial spasm is seen in the cases of hay and rose fever that are complicated by asthma. The initial irritation is within the nose. In rare cases we find the efferent nerves to the bronchi excited by mental changes or changes originating within the central nervous system. In mild uræmic poisoning asthma occasionally occurs. Whether, in these cases, the uræmic poison primarily irritates the central nervous system and thus provokes the attack, or the peripheral nerves and bronchial muscles, is not known, but the former explanation seems probable. The mechanism, as you will notice, essential to the production of most asthmatic attacks, consists of the afferent nerves and primary irritation of their termini, of nerve centres, probably in the medulla, by which the irritation of the afferent nerves is reflected to the efferent nerves and, lastly, the efferent nerves and their endings in the muscles of the bronchi. For convenience we may name the first of these factors, the afferent nerve endings, the *source of irritation*; the second, the

nerve centre, the *reflector*; and the third, the efferent nerves and bronchial muscle fibres, the *focus of irritation*.

An analysis of the mode of action of the drugs that are most successful in asthma shows that in one of three ways they relieve the spasm. We may therefore place them in three groups: These groups are characterized by the mode of action of the drugs upon the nervous mechanism involved in asthma. The first includes those that affect the source of irritation and thus prevent the development of an attack; the second those that benumb the nerve centre or reflector of irritation; and the third those that act upon the focus of irritation.

In the first group we must place a very promising collection of drugs, since the source of irritation may be in almost any part of the body. We find, therefore, in this list, those medicines that allay irritability of nasal, pharyngeal, bronchial and gastric mucous membranes, and also those that allay irritability of the womb and some of the parenchymatous organs.

A very considerable number of cases have for the source of irritation the nasal mucous membrane. The irritant may be a foreign body in the air that is breathed, or a chronic inflammation of the mucous membrane, or a polypoid or other growth. Prophylaxis is readily applied to the cases of hay fever, in which foreign bodies in the atmosphere are the exciting cause and the nasal mucous membrane the source of irritation of the disease and complicating asthma. A change of climate and therefore of air is curative. The localities in this country that afford most perfect exemption are the White Mountains, Mackinac and many localities along the shore of Lake Superior, and numerous places in the more elevated parts of the Rocky and other mountainous regions. A residence in the heart of a thickly populated city will often grant to individual cases immunity, although they may suffer severely in neighboring suburbs. As these attacks are most likely to occur at certain seasons, especially in August and September and less frequently in June, temporary changes of abode at these times will usually give to those who are liable to the attacks exemption. Many of the afflicted cannot take advantage of such prophylactic treatment. It is possible, usually, to lessen the severity of attacks and sometimes to prevent them by appropriately applied medicinal treatment. There is necessary for the production of this asthma not only the specific irritant in the atmosphere, but a peculiar sensitiveness of the nerve endings which constitute the source of irritation, and possibly also of the nerve centres. Advantage can be taken of these facts in mitigating and preventing the disease when a change to a pure unirritating air is impossible. Thus, in hay fever, local anæsthetics applied to the nasal mucous membrane will frequently

hold the disease in abeyance or at least mitigate it. Of the remedial agents that can be topically applied for anæsthetic effects, cocaine is the most important. A 5 to 10 per cent. solution may be sprayed into the nose through the anterior nares and, when necessary, also applied to the posterior nares through the mouth. Or it can be employed by insufflating a powder composed of it and some bland diluent. A cocaine ointment may be used, a little being placed in the nostrils and allowed to melt and trickle backwards so as to anoint the mucous surfaces. This method is less efficacious than either of the others, since the drug is not applied so uniformly to all parts of the nose. It must be remembered in regard to cocaine that, if used in small amounts often, or in strong solution less frequently, symptoms of intoxication may be produced. I have rarely found it necessary to use preparations of more than 4 per cent. strength. Often a few applications of cocaine will greatly aid in discovering the source of irritation, for cases occur in which we suspect the source to be in the nose or throat, and if applications to these parts allay the dyspnoea, we may feel that our suspicions are well founded.

As a topical application morphia is also useful. It acts less promptly than cocaine, but often its effects are more lasting. A favorite formula of mine consists of 4 per cent. of cocaine, 2 per cent. of morphia, mixed with some inert powder or with water, according as I wish to make applications by insufflating or by spraying.

To prevent asthmas that result from the existence of chronic inflammation or tumors within the nostrils a destruction of the irritating tissue must be effected. A temporary relief can often be obtained by the use of the local anæsthetics just mentioned. Rarely the source of irritation is found in the pharynx or larynx. In such cases the irritant is usually a morbid growth or a chronic inflammation with hypertrophy. Such lesions must be treated just as are their analogues in the nasal cavity.

We must place in this miscellaneous group also the various expectorant and anodyne mixtures that are employed to allay laryngitis, trachitis or bronchitis, since these inflammations are frequent causes of asthma, and therefore their cure will give exemption. The efficacy of such mixtures is greatly enhanced by combining with them drugs that belong to the second group, or those that allay the excitability of the reflex centres.

In the same way asthma which accompanies uncompensated valvular disease of the heart is relieved by digitalis and similar drugs. They strengthen the heart's action and give greater tone to the blood-vessels, and thus reduce venous hyperæmia of the lungs and bronchi. These remedies accomplish more for such asthmatics than those that relax muscular spasm. They do good by stopping the irritation at its source.

Cases in which the source of irritation is in the organs of the alimentary tract are relieved, and often permanently cured, by treatment of the primary lesions. Occasionally a woman is found who is persistently troubled with asthma during pregnancy, although free from it at other times. Absolute relief is, so long as pregnancy lasts, usually impossible. I have, however, seen most marked benefit obtained by the persistent use of *viburnum prunifolium*. This drug without doubt lessens the irritability of the uterine tissues, and thus diminishes the irritability of the source of irritation of the asthma.

The second group of drugs includes those that act on the nerve centres and thus inhibit reflex action. The most important of them are chloral, chloroform, ether, opiates and bromides. When dyspnoea is intense a few whiffs of chloroform will give relief promptly. As the relief is often not of long duration and as the drug cannot with safety be left in the hands of the sufferer, its range of usefulness is limited. Of this group, chloral is the safest and most universally useful. If the asthma is wholly paroxysmal, it is best administered in one or two full doses rather than in several smaller ones. Often 1 gram or 1½ grams, given in sweetened water, will not only relieve present dyspnoea but produce an effect sufficiently lasting to suppress the attack. In cases that occur as complicating bronchitis, trachitis or laryngitis, and in which the dyspnoea is not paroxysmal only, but to some extent is persistent, since the source of irritation is constantly excited, the best effects are to be obtained by the repetition of smaller doses of chloral or of bromides, or of opiates, or of mixtures of all these with expectorants. In this way the nerve centres are constantly inhibited or restrained in their activity, so that the paroxysms of exacerbation are held in abeyance and time is gained in which to overcome the primary inflammation. A formula that I have frequently employed with marked benefit in such cases is the following:

R. Chloral	grams 15.00.
Ammonii muriatis.	" 10.00.
Morphiæ muriatis.	" .20.
Antim. et pot. tart.	" .15.
Ex. grindeliæ robustæ fl.	" 45 vel 60.00.
Aq. vel syr. glycyrrhiz q. s. ad.	" 120.00.

Give 1 teaspoonful every three to six hours in sweetened water.

Morphia and the bromides are less generally useful than chloral. The bromides, given steadily in rather large doses, are serviceable when the source of irritation is the larynx or pharynx, for they not only act favorably by lessening the excitability of reflex centres, but also have the peculiar property of benumbing the nerve endings in the mucous membrane of the larynx and pharynx. The dose should be large, for example, 1½ to 3 grams of the bromide of sodium.

There is another class of remedial agents which

it is difficult to classify with certainty, for our knowledge of their physiological action is imperfect, and the results of researches are not completely harmonious. The drugs to which I refer are *grindelia robusta*, *senecio aureus*, *quebracho*, *lobelia*, *tobacco*. It seems probable, however, that as remedies for asthma they can be placed in this second group. The last of these we know produces its nauseant effects chiefly by acting on the nauseating centre in the medulla. Death from tobacco poisoning is due to paralysis of respiration. The end organs of the motor nerves are first affected, then the nerve trunks, and finally the respiratory centre. The physiological action of *lobelia* is very similar to that of tobacco. When *lobelia* is used in asthma it must be given in doses of from 2 to 4 cubic centimetres of the tincture, and repeated every two hours or oftener until vomiting and relief are produced. Mitigation of the dyspnoea usually corresponds with intense nausea and is greatest after vomiting.

Tobacco is useful only in mild cases, and when used by persons not accustomed to it. From the apparent relation of the therapeutic effect to the nausea, the action of the drugs seems to be due to an influence which they exert upon the respiratory and vomiting centres. It is not possible that their therapeutic action is due to paresis of the motor nerves, for it is only by overwhelming doses that these nerves are paralyzed. Tobacco and *lobelia* do not affect the muscle fibres. It must be remembered, too, that during intense nausea from any cause respiration becomes deeper and more forceful. From all these considerations, I feel inclined to ascribe their favorable action to the influence they exert over the reflex act at the nerve centre.

Quebracho has a peculiar effect upon respiration in healthy persons. It slows it and prevents panting when hurried movements are made. At the same time it retards the heart. Gutman has shown that its active principle, *aspidospermine*, produces death by poisoning the respiratory centre.

We know less of the physiological action of *grindelia* and nothing of *senecio*. *Grindelia* produces death only in very large doses, and then by paralyzing respiration. In smaller doses it slows the respiration and the heart.

The effects of *lobelia* must be carefully watched, for large doses have produced alarming symptoms. For this reason I have employed it rarely, but *grindelia* I have administered frequently and *quebracho* and *senecio* less frequently, although enough to feel confident that to some extent they are useful. They are so much less efficacious than some other remedies at our command for the relief of the dyspnoea that I rely upon them not at all for its treatment, but rather as adjuvants for warding off the recurrence of the paroxysms.

Grindelia and *quebracho* are probably mildly expectorant, and through their bitterness tonic to

the stomach. I have seen several cases apparently exempted from severe attacks by *senecio aureus* only. The drug was not given during dyspnoea, but while the paroxysms were threatening and at a season when the patients were usually afflicted by them. By the continued use of it for several weeks an actual outbreak was avoided. *Grindelia* and *quebracho* are the most efficacious of these remedies. But their bitter and otherwise unpleasant taste limits greatly their eligibility. Their fluid extracts can be administered in doses of 2 to 4 cubic centimetres.

The third group of drugs embraces the nitrites and nitro-glycerine. Amyl nitrite administered by inhalation has been used in asthma for a number of years. Nitro-glycerine has been used less frequently, and the nitrites of soda and potash still less. Prof. Fraser, of Edinburgh, has given us the most trustworthy information as to the relative value of these drugs in asthma. They all relieve the spasm, and with wonderful promptness. The effects of amyl nitrite are very transitory. Nitro-glycerine, when given in doses of sufficient size, is apt to provoke congestive headache. The nitrite of soda he found gave quite as prompt relief as the others, was less likely to provoke headache and produced more enduring effects. The more purely spasmodic the case the more efficacious are these drugs. Dr. Fraser found that in two or three minutes after the administration of even half grain doses of the nitrite of soda, marked relief was noticeable in the patient's breathing and a lessening of the crowing and piping in the chest. In ten minutes or less, as a rule, the patients feel comfortable. It was rare that it was necessary to repeat the dose in any single attack. The good effect of these drugs, when administered in the usual therapeutic doses, is undoubtedly chiefly due to their action upon the muscle fibres of the bronchial tubes, irritability of which they lessen or temporarily destroy. In other words, they act upon the focus of irritation. In less degree they may diminish the irritability of the motor nerves. This is a somewhat doubtful effect of therapeutic doses, although it can be obtained from large doses. Very large doses also lessen the excitability of the spinal cord and higher nerve centres. In using the nitrite of soda, which from considerable personal experience I can commend, it must be remembered that there are two preparations in the market, a "commercial" and a chemically pure. The former can be given in doses of from 5 to 10 grs. (gms. .3 to .6), and 20 grs. (gms. 1.3) have been given without harm. The therapeutic dose of the chemically pure drug is from 1 to 5 grs. (gms. .06 to .3). Headache, although of rare occurrence from the nitrite of soda, is not always wanting. During the present fall, in the case of Mrs. C., I directed 6 decigrams of the commercial nitrite to be taken. It relieved

ANNOUNCEMENT

TO THE MEMBERS OF THE

AMERICAN :- MEDICAL :- ASSOCIATION

—BY—

PARKE, DAVIS & CO.,

MANUFACTURING PHARMACISTS, NEW YORK AND DETROIT.

IT IS our belief that every physician worthy the name desires in pharmaceuticals genuineness, absolute purity, uniformity and palatability. These qualities are indispensable to securing the best therapeutic results. Pharmaceuticals possessing these essential characteristics must have been made from drugs selected with the greatest care by those able to distinguish between genuine and spurious varieties. The crude drugs must have been tested by experts to have had the proportion of active medicinal principle in each lot determined. They must have been manufactured into the finished pharmaceutical preparation by the manipulations of skilled workmen, with the aid of a great variety of machinery and apparatus, and made into acceptable forms for dispensing and administration, and rendered palatable without sacrificing their medicinal strength by the operations of proficient, accomplished pharmacists.

Naturally these ends cannot be perfectly achieved without large financial outlay. It follows that properly prepared pharmaceuticals are not the cheapest offered in the market. Cheapness in pharmaceuticals, as in other products, often means a sacrifice of excellence.

In carrying on all the operations requisite to manufacturing pharmaceuticals, our first consideration is to make as perfect products as careful attention to all the details mentioned can create. We spare no necessary expense in effecting this purpose.

Honesty applied to the manufacture of medicines means recognition of the fact, that the permanence of a business existence depends on appreciation of the identity of the interests of the seller and buyer.

In no industry has this principle been more openly ignored and violated than in the drug trade. The consumers of drugs, the public, are not judges of the purity or value of a medicinal product as they are of other necessities, as bread or meat, and hence the way is open for imposition, by the sale of nostrums and patent medicines, many of which are either inert or positively harmful.

The sale of these classes of medicines we believe does great injustice to physicians and harm to the public. The principle of protection as applied to medicinal formulæ is radically wrong.

In this belief we resolved at the commencement of our business career to protect none of our products by patent, copyright or trade mark, but to rely for reputation and commercial success on their superior excellence, on our skill in manufacture, our enterprise in discovering new preparations of value and in improving old ones. Our products reach the public only through the physicians' prescriptions.

This policy all thoughtful physicians must appreciate is not only the most liberal and intrinsically the most ethical, but must necessarily lead us, in carrying it out, to work *with* and *for*, not *against* the medical profession. We feel, therefore, that our claim for the patronage of physicians is a valid one based on our mutual interests, and that preference for our products should be shown in prescribing.

Among classes of remedies which we have done much to improve, we desire to briefly call attention in the following pages to a few to which we have given prolonged study, and which the results obtained justify us in claiming to be superior to any other similar classes of preparations at the command of physicians.

THE DIGESTIVE FERMENTS.

THE utility of a remedy depends largely upon its purity, and its preparation in that form which is best adapted to meet the particular conditions or indications for its use. Modern pharmacy has achieved most important and useful results in the direction of improving the quality of remedies, of rendering them easier of administration and absorption, and better adapted for the purposes for which they are required. By this means, also, the range of therapeutic application of many remedies has been extended.

Not the least striking of the results recently attained has been the improvements made in the quality of the digestive ferments, and in the growth of knowledge concerning their action and application. With this increased comprehension of ferments has naturally come an extension of their application.

This is conspicuously illustrated by pepsin, which has been prescribed for many years with little knowledge concerning its digestive activity or incompatibilities, and the dose required; but rather as an digestion in all cases of indigestion indiscriminately.

Recent researches carried on in our laboratory have enabled us to produce a pepsin which is superior in every quality that goes to make up a pure, active pepsin to any other hitherto made. This has been demonstrated over and over again. We need only mention here in confirmation of this claim the results obtained by a recent elaborate study of pepsins of various manufacture made by R. H. Chittenden, Ph.D., Professor of Physiological Chemistry in Yale University, who thus sums up the results of his investigations in a paper read before a section of the New York Academy of Medicine:

"As a final result, then, we may consider the true proteolytic power of the following pepsins compared with the one of highest digestive power to be as follows:

	Relative Proteolytic Action.
1. Parke, Davis & Co.'s Pepsinum Purum in Lamellis	100
2. Fairchild's Pepsin in Scale	52
3. Scheffer's dry Pepsin, concentrated	48
4. Jensen's Crystal Pepsin	35
5. Ford's Pepsin in Scales	32
6. North's Pure Pepsin	16
7. Boudault's Pepsin	14
8. Royal Chem. Co.'s Pure Pepsin	9

While the use of pepsin was for a time confined chiefly to internal administration, it has been gradually extended to the digestion of visible false membrane and abnormal tissue growths. Thus many physicians have used it with some degree of success in digesting the false membrane of diphtheria and membranous croup. This use of pepsin is likely to become much more universal and efficient with the greatly augmented digestive power now possessed by the latest improved pepsin.

Of Pancreatin, which now plays so important a role in peptonizing various foods, we supply what is termed Pure Pancreatin, Saccharated Pancreatin, Liquid Pancreatin, and for convenience in peptonizing milk Peptonizing Tablets.

Circulars with instructions as to peptonizing foods will be sent on request.

To those who wish to learn more of the action and proper method of administration, and incompatibilities of pepsin and pancreatin, and of the interesting history of the researches that have resulted in the superior quality of these agents now at the disposal of the physician, we shall be pleased to send on request reprints of articles by R. H. Chittenden, Ph.D., John R. Winslow, M.D., H. B. Douglass, M.D., J. Le Roy Webber, Ph.G., F. A. Thompson, Ph.C., and others, with descriptive circulars and samples of Pepsinum Purum in Lamellis one grain Tablets and Peptonizing Tablets for trial.

PARKE, DAVIS & CO.

CASCARA SAGRADA.

Extension of its Therapeutic Application and Improved Forms for its Administration.

NOTWITHSTANDING the activity of research in the discovery of new therapeutic agents, and the efforts made to supplant it, Cascara Sagrada remains to-day easily chief of the remedies for the radical relief of chronic constipation.

Not only this, but the range of application of Cascara Sagrada has been extended to the treatment of Rheumatism, and in this disease, alone and in combination with the Salicylates, it has proved in the experience of many eminent physicians radically curative.

The physician now has the choice of several eligible forms in which to prescribe it; the fluid extract containing the bitter principle; the fluid extract formula, 1887, comparatively free from bitterness and equally efficacious in the majority of cases; soluble elastic capsules of the extract, from one to three grains; pills of the extract, alone or in combination with adjuvants, and many other eligible forms

Any therapeutic action inherent in Cascara Sagrada is only possessed by the true *Rhamnus Purshiana*, and there being many inferior and spurious preparations of the drug in the market, we would ask physicians in prescribing to specify our product. Having introduced this drug and made a special study of its nature and action for years, and having unequalled facilities for obtaining supplies of the highest quality, we believe our product to be superior to any other offered.

We would particularly request physicians who have not met with success in the use of Cascara Sagrada to ascertain the product they are prescribing, and to make trial of that of our manufacture.

Working bulletins and interesting literature relative to Cascara Sagrada furnished to physicians free, on request.

GLYCERIN SUPPOSITORIES.

(Suppositoria Glycerini, Suppositoria Aperitiva.)

CONTAINING 95 PER CENT GLYCERIN.

THIS ready means of securing defecation is likely to become very popular. It is a great improvement over the injection of glycerin and quite as efficacious.

We have given careful study to the manufacture of these suppositories, and believe we have overcome all difficulties incident to making them.

To those physicians who have not employed them we commend their early trial, and to this end we will furnish samples free on request.

In prescribing we ask physicians who desire to use a reliable active product to specify Glycerin Suppositories of our manufacture.

PARKE, DAVIS & CO.

GELATIN PRODUCTS.

EMPTY AND FILLED GELATIN CAPSULES, AND OVAL GELATIN COATED PILLS.

THE development of æsthetic tastes has been a most marked accompaniment of the material progress of the people of America. The desire to unite beauty with utility is so universally manifested that it was to have been anticipated that it would modify forms of medicine, and this has been the case. To-day the physician who fails to recognize and satisfy this demand, however sterling his qualities, will not attain practical success.

We have a special laboratory for the manufacture of Gelatin Products, and it is, we believe, due to our efforts that this variety of medication has become popular among physicians. The application of Gelatin Capsules in the administration of bitter or nauseous drugs has, we might almost say, revolutionized the exhibition of medicines, and to-day Gelatin Capsules are a favorite method of medication with both physicians and patients.

The step from empty to filled Gelatin Capsules was a most natural one, and at the present time it may be said that physicians might confine internal medication almost exclusively to this class of products and be able to meet almost every conceivable indication for treatment.

Pharmacy has given to medicine no more elegant method of administering drugs, especially those of a bitter and nauseous character, than the soluble elastic filled capsule PROPERLY MADE. We say properly made advisedly, for owing to the great demand for them so many inferior capsules have been put upon the market by those having imperfect facilities for their manufacture, the resultant product being inelastic, insoluble, and inelegant in appearance, that many physicians do not properly appreciate the advantages offered by a *HIGHLY-ELASTIC, PERFECTLY-SOLUBLE* capsule with medicinal contents of the very PUREST QUALITY OBTAINABLE.

Of the elastic filled capsules we make 87 formulæ. Especially convenient and in greatest demand are elastic capsules of quinine, cascara sagrada, pichi, castor oil, cod liver oil, copaiba and cubebs. We trust those of our medical friends not already familiar with this class of our products, will send for our formula book of capsules, wherein many points are presented which we cannot adequately cover here.

OVAL GELATIN COATED PILLS.

THE advantages of pills as a method of exhibiting medicines need no presentation to a medical audience. The preference shown by patients for oviform pills, indicated by the extensive demand for them as compared with the round, is not based on fashion or prejudice. The difficulty experienced by many in swallowing round pills has been found to be very much less marked when the oviform are used. Only those who have themselves struggled against the action of the muscles of deglutition to swallow a round pill can fully appreciate the superiority of a form which renders deglutition easy.

Pills from our laboratory are made entirely by hand from the purest materials, and coated by a method avoiding the application of any degree of heat that could impair their medicinal efficacy. The formula in each instance is strictly followed and the ingredients perfectly distributed. Particular care is taken to insure the preservation of the drug, and for permanence, ready solubility, superiority of finish and uniformity of coating we believe our pills are unexcelled. Formerly pills to be coated with gelatin were impaled on pins; the completion of the process on the withdrawal from the pin leaving the pin-hole which exposed the contents to the deteriorating influence of air and moisture. We alone of all manufacturers now employ a new process for coating which effects the perfect enwrapping and protection of the pill contents. We can, therefore, confidently recommend them to the profession. Our list comprises most of the official and popular formulæ known to the profession, and also many new and valuable combinations. We may mention also our line of sugar coated pink granules, designed for use in cases in which the dose is desired to be frequently repeated, or for administration to children.

We would request physicians desiring full information regarding this eligible class of medicinal products to send for our formula and dose list of pills and granules.

PARKE, DAVIS & CO.,
DETROIT AND NEW YORK.

the dyspnoea promptly, but produced an intense though temporary headache. While the most beneficial effects are obtained in the most frankly paroxysmal cases, I have derived marked benefit from the continued use of these remedies in asthmas that complicated bronchitis and that were to some extent persistent. In such cases I have combined the nitrite of soda with the usual expectorant and anodyne treatment of bronchitis. I have administered it in 18 to 30 centigram doses every three to six hours. While it does not influence inflammation or allay cough, it seems to lessen the dyspnoea and prevent the paroxysmal exacerbations which recur in such cases.

Atropia, stramonium and hyoscyamus constitute another series of drugs that are analgesic to the focus of irritation. The two first are the ones most frequently used in this disease. They cause relaxation of the bronchioles, in part by benumbing their involuntary muscular fibres and in part by lessening the sensibility of their terminal nerve fibres. While efficient in aiding to give relief, their side effects are so marked and often so disagreeable that they cannot be used in efficient doses. The action of the drugs is so well known that I need hardly say that these side effects are dryness of the mouth and throat and heat and redness of the skin, dilatation of the pupil, disturbed vision and, in very susceptible patients, mental disturbances. I have rarely employed these remedies in the full doses that are necessary in order to obtain the best results in asthma, but frequently use them in smaller doses to reinforce the action of other drugs. A favorite and very efficient combination for the relief of asthmatic dyspnoea I have found to be:

R. Chloral	grams 20.
Sodium nitrite.	" 3.
Tinct. stramonium.	" 10.
Eliz. simpl. q. s. ad	" 60.

Take 1 teaspoonful every four hours in water.

Not only do these remedies act favorably when they are taken by the stomach, but the inhalation of the smoke of the crude drugs is often of the greatest benefit. Stramonium leaves are used in this way most frequently. The leaves are smoked either when rolled into cigarettes or from a pipe. Their efficacy is enhanced by first soaking them in a saturated solution of nitre and subsequently drying them for use; or they may be mixed with or rolled in bibulous paper that has been thus saturated. The nitre is decomposed by the heat and a nitrite is formed which aids in relieving the dyspnoea. There are numerous proprietary cigarettes and pastels for asthma, the basis of whose composition is stramonium and nitre.

Rarely examples of a peculiar form of asthma are seen in which the source of irritation seems to be mental or central rather than peripheral. I refer to those cases in which the dyspnoea is caused by fear, and to those in which it is excited by cer-

tain but the most varied localities or odors. If these susceptible persons are not conscious of being in the locality of the noxious object no respiratory discomfort is experienced. These are cases of mental idiosyncrasy, and usually occur in persons of an hysterical temperament. It is in such cases that valerian has sometimes been used with benefit.

Asthma occurs as a frequent complication of Bright's disease. It is caused in two ways by this disease. In some cases it arises from a complicating bronchitis, but more frequently from uræmic poisoning. When bronchitis is the cause it must be treated upon the principles already explained, but when uræmia is present a different method must be employed. The measures that are most beneficial are those that aid in eliminating the poison. Diaphoretics, diuretics and cathartics are therefore indicated. The first of these classes of drugs gives the most prompt relief. Of diaphoretics, pilocarpine administered subcutaneously is the most prompt in its action. The uræmic poisons are largely eliminated by the copious diaphoresis that it produces. It is necessary to prevent their reaccumulation. This is best accomplished by diuretics and, when they are not sufficient, the coincident use of cathartics. Cathartics and the preparation of jaborandi must be employed with much caution when a patient is debilitated or has heart weakness.

In the intervals between the dyspnoeic attacks the iodides are often prescribed, and with marked benefit. Unfortunately, they do not uniformly ward off or mitigate the paroxysms. Clinicians have not yet discovered the precise indications for their use. The cases in which I have most uniformly derived good results from their employment have complicated chronic bronchitis. It is probable that their good effects are largely due to the property which they possess of promoting reabsorption of cellular exudates into inflamed tissues. The iodide of soda is the most eligible preparation for persistent employment. It should be given for weeks and often for months.

There have been observed rarely cases in which the asthma seemed due to direct irritation of the pneumogastric nerve by enlarged bronchial and cervical glands. In a few of these cases the iodides are said to have done good by reducing the glandular enlargement.

Arsenic is also frequently administered persistently in the intervals between paroxysms. How it acts we do not know. It is a remedy, as you remember, that is employed for the relief of many paroxysmal neuroses. The Fowler's solution, administered in gradually increased doses up to the point of toleration and then persistently continued, is perhaps the favorite prescription. Personally I have not been gratified with the results that I have obtained from its use.

ORIGINAL ARTICLES.

MICRO-ORGANISMS; AND THEIR RELATION TO DISEASE.

Read before the American Academy of Medicine, and approved by the Council for publication.

BY SAMUEL N. NELSON, A.M., M.D.,

OF BOSTON, MASS.

SURGEON TO THE SOLDIERS' HOME IN MASSACHUSETTS.

The rôle of the microorganisms called bacteria is at present probably occupying the attention of more scientific men than any other subject in modern science. Great numbers of observers are at work on both continents in the solution of the *germ theory of disease*. Comparatively unknown till within a few years, on account of their very minute size, these microorganisms attracted attention and experimentation chiefly when the improvement of the microscope allowed objects of their size to come within the limits of its powers of observation. At first simply recognized as existing, their persistence and universality demanded question as to what they are, their origin and object.

The history of these microorganisms is related to that of spontaneous generation, to that of the fermentations, to the pathogeny and therapeutics of a great number of virulent and contagious affections; and in a more general manner to all the unknown, which notwithstanding the efforts of modern science still surrounds the origin of life and its preservation.

The bacteria are the lowest of organisms, belonging to the vegetable kingdom and are thus defined by the botanists, who have most recently occupied themselves with them: "Cells deprived of chlorophyll of globular, oblong or cylindrical form, sometimes sinuous or twisted, reproducing themselves partly by spores and by transverse division, living isolated or in cellular families, and having affinities which approach them to the algæ, and especially to the oscillariæ."

The atmosphere transports myriads of microscopic plants and animals. M. Miquel has pursued interesting studies upon them. M. Pouchet has devised the *aëroscope*, that bears his name, for collecting dust from the air which contains remnants of articles that we use, existing in the condition of impalpable dust, also pollen of plants, particles of mineral matter, and the spores of cryptogams, the moulds and algæ. Some micrographers have suggested that germs may be transported by the vapor of water; but Miquel's experiments show that the evaporation of water from the ground never carries any schizomycetes with it. On the other hand, dry dust, especially from hospitals, etc., is charged with microorganisms. The greatest labors, however, have been employed concerning a different class of organisms than the algæ and moulds. The plants

comprising this group, under the common designation of *bacteria*, in consequence of their extreme minuteness and refractive power, are invisible in the preparations of the *aërosopes*, and are recognized only by the higher powers of the microscope.

The first observer who recognized the microorganisms was Leeuwenhœck, as early as 1673. While examining with his magnifying glasses a drop of putrid water, the father of microscopy remarked with profound astonishment that it contained a multitude of little globules which moved with agility. During the following year he observed the presence of bacteria in feces and in tartar from the teeth.

M. Cohn is a naturalist who has occupied himself very much with the bacteria. In 1853 he published his first researches upon this subject and twenty years later there appeared a series of "Memoirs" devoted to these organisms. In the first paper he gives an exposition of his researches upon the organization, development and classification of the bacteria, and upon their action as ferments. His classification is:

1. The *sphærobacteria*, or globular bacteria.
2. The *microbacteria*, or rod bacteria.
3. The *desmobacteria*, or filamentous bacteria.
4. The *spirobacteria*, or spiral bacteria.

This classification has probably been accepted by more germ theorists of to-day than any other classification.¹

The smaller spherical bacteria may be confounded with various objects, *e. g.*, molecular granules, fat globules, amorphous precipitates, etc. To distinguish these pseudo-bacteria Nägeli says: "There are but three distinctive signs which enable us to recognize with some certainty that the granules under observation are organisms: spontaneous movement, multiplication, and equality of dimensions, united with regularity of form." To which may be added the action of re-agents.

The atmosphere is laden with these microorganisms. Developing in the organic infusions into which they fall, they soon determine their complete decomposition; for during their growth bacteria live upon the nutritive material, as all other plants do upon their soil. This is putrefaction, and they are always present as the cause. As is well known, bacteria are always present in some form or other in fermenting liquids. Fermentation only occurs after the access of particles from the outer world, and it is asserted by the supporters of the germ theory that these particles are organisms or their spores, and that it is by the growth of these organisms in the fermentiscible material that it undergoes alteration. The essentials for the production of new forms are: a putrescible body, water

¹ The classification proposed by Koch is now quite universally accepted. The term *bacteria* is used in the general sense, including both the *micrococci*—the ball forms—and the *bacilli*—the rod forms—*Written since reading of the paper.*

and air; while heat, light and electricity favor the process.

As Sir William Roberts says: "Without saprophytes there could be no putrefaction; and without putrefaction the waste materials thrown off by the animal and vegetable kingdoms could not be consumed. Instead of being broken up, as they are now, and restored to the earth and air in a fit state to nourish new generations of plants, they would remain as an intolerable incubus on the organic world. Plants would languish for want of nutriment, and animals would be hampered by their own excreta, and by the dead bodies of their mates and predecessors—in short the circle of life would be wanting an essential link. A large proportion of our food is prepared by the agency of saprophytes. We are indebted to certain bacteria for our butter, cheese, and vinegar. Our daily bread is made with yeast, and to the yeast plant (discovered in 1836 by Cagniard de la Tour, and also independently by Schwann about the same time) we also owe our wine, beer and spirituous liquors. As the generator of alcohol, this tiny cell plays a larger part in the life of civilized man than any other tree or plant."

Unfortunately for us, however, they have a powerful potency for evil also, and it is the noble aim of science to be able, by thorough study of the conditions under which that potency is acquired and exerted, to keep it under efficient control.

Much still remains to be determined with regard to the disease-producing possibilities of the germs that in invisible clouds drift in the atmosphere. The more delicate and exact methods of the most recent observers—Koch, Pasteur, Tyndall, Ehrlich, Ogsten, Sternberg and others—with regard to their nature seem to show that there are many varieties of them, each of which has its own conditions of growth, requiring or developing best in a particular soil. Different species multiplying in different media and varying in their susceptibility to different temperatures and to different chemical reagents. Apparent identity of form does not necessarily indicate identity of nature. They are not convertible into each other. Each species produces only itself, and is produced by itself alone, and when introduced into a substance that affords a favorable soil for its growth always produces the same results. These results are not produced suddenly, but are of gradual development, progressing with the slow and steady multiplication of the organism. They may be cultivated artificially in either solid or liquid media. The best known and most commonly used solid medium is nutrient gelatine, which unites the advantage of transparency with that of solidity; but it has the disadvantage of melting at a comparatively low temperature. When it is desired to cultivate bacteria at a temperature approaching that of the human body, sterilized blood-serum

may be used, or a preparation of agar-agar, a Japanese sea moss. The cut surface of a freshly sterilized boiled potato is also a very satisfactory culture medium under some conditions.

For liquid cultures a tube or bulb hermetically sealed, containing a sterilized infusion of hay or meat, is used, which will remain clear indefinitely. When, however, the germs are introduced in ever so minute quantity, they begin to develop, after a varying interval of one to twenty days, and then they rapidly increase. The liquid infusion, previously clear and pellucid, becomes more or less cloudy or turbid. When in this condition, we may be sure of the presence of rapidly increasing microorganisms in great numbers, as the microscope will invariably reveal.

It has been a widely disputed question as to whether bacteria ever occur in the animal in a perfectly healthy state; the affirmative view having been taken by Billroth and some others; but it is denied by Koch, by Pasteur and by Ehrlich, who state that they have never detected bacteria in the healthy animal. The failure of putrefactive bacteria, according to experiments, would go to show inability to struggle against the normal cells indigenous to the soil upon which they were planted. Some bacteria showed power of existence only in tissue in which vitality had entirely ceased, while others seemed to possess the power of existence in the presence of the animal cells when the latter suffered from impairment of nutrition, and the tide of life was turning against them. Abnormal composition of the blood seemed to favor the development of some bacteria, after they had found their way into the tissues.

The theory of a causal relation between bacteria and diseased processes has recently received a wide acceptance. In some diseases this relation is established, while in others it is presumed on the ground that bacteria are found in the blood and diseased products. As additional evidence in favor of special bacteria for different diseases, the fact is advanced that bacteria found in different diseases have been discovered to have different morphological and chemical properties; to which may be added of still greater value, the different appearances presented by the colonies growing upon solid culture media.

Admitting this causal relation of bacteria to disease, it must be demonstrated by successive cultures of the bacteria found to exist in the diseased person, and by the induction of the same disease in man or healthy animals by inoculation, with a reproduction of bacteria. The first discovery of the association of a germ with disease was by Pollender, in 1849, who found certain rodlets in the blood of animals suffering with splenic fever, also variously known as anthrax, charbon, miltzbrand, malignant pustule, and wool-sorter's disease. The specific character of

the parasite was afterwards pointed out by Davaine (1863), and subsequently carefully investigated and confirmed by Pasteur and Koch. The bacillus can be isolated and developed in proper cultivating media, and, when inoculated into some animals will produce splenic fever.

Again, in 1873, Obermeyer, of Berlin, discovered a bacterium in the blood of patients suffering from relapsing fever, which has been named *Spirillum Obermeyerii*. It is found only during the febrile paroxysm, disappearing during the interval. So far, attempts at cultivation have proved unsuccessful.

In March, 1882, Koch, of Berlin, announced the discovery of the *bacillus tuberculosis*, which he asserted to be the exciting cause of tuberculosis. His results have been confirmed by many observers, and the bacilli have been found in the tubercles and sputa of persons suffering from phthisis. As you all know, they reproduce themselves when cultivated under proper conditions, and cause tuberculosis when inoculated into animals.

The discovery of the parasitic origin of glands followed closely upon that of the bacillus of tuberculosis. This was also made in Koch's laboratory by Prof. Schultz and Dr. Loeffler; and the results were verified by pure cultures and inoculations.

Birch-Hirschfeld has confirmed the discovery of the presence of a microorganism of syphilis, already announced by Aufrecht, which consists of oval-shaped micrococci in chains.

In gonorrhoea a micrococcus was discovered by Neisser, isolated, cultivated, and, it is reported, successfully inoculated.

Bacteria have also been found in malaria and in whooping-cough. A micrococcus has also been found associated with croupous pneumonia, by Friedlander. This may occur singly, but is generally found as a diplococcus.

Von Recklinghausen first described the bacteria of typhoid fever; and Klebs, in 1881, described a large bacillus, which he calls *B. Typhosus*, in which spores are formed in the centre, and often at the end. This is carried by the blood and lymphatics, and is found in all the organs. It is more generally believed, however, that the *causa morbi* is a peculiar short bacillus discovered by Eberth. This is rounded at both ends, and has spores. It is found in the ulcers, mesenteric glands and spleen; and has been cultivated by Gaffky. The inoculation of animals has not been successful; but it must be remembered that they do not have the disease spontaneously.

The *Micrococcus Vaccinæ* is very small, only half the thousandth of a millimetre in diameter, and is found isolated or in pairs, and when cultivated forms chaplets. Cohn regards *M. Vaccinæ* and *M. Variolæ* as different races of the same species, but Magnin thinks them identical. In

vaccinia they are found in the lymph of the vesicle, and in its borders in the rete malpighi, and were subsequently traced into the subjacent cutis, especially in the lymphatic spaces. The multiplication and extension coincides with the development of the pustule. In variola, Chauveau (1868) first proved a particular nondiffusible active principle; and Cohn (1872) first proved that the lymph contains numerous micrococci. I have myself cultivated the *M. Vaccinæ* into the third generation in liquid media, the first inoculation being made directly from the lymph of the vesicles on a calf at Dr. Martin's stables in Roxbury; but limited experiments failed to produce characteristic vesicles on babies vaccinated from these cultures.

The comma bacillus of cholera (Koch, 1883) has of late attracted much attention. They are found chiefly in the excreta of cholera patients, are slightly curved like a comma or half of the letter U, and occur single or in pairs like the letter S; when their growth is retarded they form a spiral chain of several members. They are easily cultivated on nutrient gelatine, forming a growth easily distinguished from others, even from those which are morphologically similar, viz, the so-called cholera nostras, comma bacillus of Finkler and Prior, the mouth comma of Miller and the cheese comma of Deneke. After much experimentation Koch has succeeded in inoculating animals. The bacilli require an alkaline medium for their growth; so he injects, with a catheter carbonate of soda into the stomach of guinea pigs, to neutralize the acid of the gastric juice. Then he injects a considerable quantity of a solution containing the comma bacilli. Even this is not sufficient; for they pass through the intestines so quickly that they do not proliferate, and therefore he injects into the peritoneal cavity tincture of opium sufficient to paralyze the intestines and stupify the animal for some time. About half of the animals so treated die in from twelve to twenty-four hours, and a nearly pure culture of comma bacilli is found in the intestines.

In scarlet fever Coze and Feltz have found micrococci in the blood, and inoculation of rabbits sometimes produced death; but it is not certain that it was due to scarlatina. Polae Pineas found very minute micrococci on the scales of desquamating epithelium; and in the throat discharge.

In acute infectious osteomyelitis a peculiar micrococcus is found, which is easily cultivated, and, when rabbits are inoculated, and their bones broken, abscesses form containing micrococci.

In measles, Coze and Feltz found bacteria in the blood which were minute and mobile. The rabbits were not killed. Braidwood and Vacher caused children with measles to breath through glass tubes coated with glycerine, and found sparkling bodies, something like those in vac-

cinia, but larger. These were most abundant during the second and third days. They also found them in the lungs and livers of two children who had died of the disease.

The individuals of the streptococci of erysipelas are smaller than the micrococci of vaccinia. Lukinsky found them in zooglea masses in the lymphatics, on the border of the erysipelatous zone. Fehleisen also found and cultivated them. He inoculated the ears of nine rabbits, and produced the characteristic rash in from thirty-six to forty-eight hours; the animals did not die. He also produced typical erysipelas, in from fifteen to sixty hours, in men who were inoculated to produce beneficial results in tumors. I have also cultivated them in liquid media.

Septicæmia and pyæmia have been carefully investigated by Koch; and these diseases have been found due to bacteria, which he has cultivated and inoculated.

In diphtheria, micrococci are found in the membrane and in the surrounding lymphatics, blood, kidneys and muscles. They are about the size of *M. Vaccinæ*, slightly oval, single or in pairs, and in colonies. Eberth showed the particulate character by filtration. Klebs claims to have produced diphtheria from inoculation of pure cultures, and to have found micrococci in the tissues and blood. Nasiloff inoculated the cornea with enormous multiplication of microorganisms in the lymphatics of the palate, bones and cartilages, and says that they are the primary step.

With the diphtheria micrococcus I have had a personal experience. Some membrane was secured from the throat of a child during the operation of tracheotomy to relieve stenosis caused by diphtheria, and with it one of my hermetically sealed culture bulbs (made after Sternberg) filled with a sterilized nutrient fluid, was inoculated. On the fourth day the liquid, previously clear, became turbid, and, on examination with the microscope at about 1000 diameters, it was found swarming with micrococci in active motion about the size of the micrococcus of pus. In form they were slightly elongated, and although found singly, were generally in groups of three or four to eight or twelve. A second bulb was inoculated with a fraction of a drop from the first; it became turbid on the third day, and was found to contain a microorganism identical with the former. In this way about fifty bulbs were used, and the cultivation was carried through ten generations, each bulb becoming turbid on the third day, and the micrococci breeding true.

With the contents of one of the bulbs containing the sixth cultivated generation of the micrococci, six guinea pigs were inoculated in the cornea of the eye. One of them died about thirty hours later, with symptoms of blood poisoning; but the rest survived. The eyes became very

sore, the lids being much swollen and œdematous, and a membrane developed over the cornea. There was profuse discharge, which contained abundant micrococci. Three pigs were killed on the third day, and the eyes dissected for examination. The others were allowed to get well, but the eyes were completely destroyed. In the aqueous humor, and in the corner of the eyes examined, were found minute, highly refractive particles of uniform size, presumably micrococci. On the third day after killing the guinea pigs, I myself had a sore throat, and in twelve hours a large diphtheritic membrane had developed on the left tonsil, accompanied with high fever and constitutional symptoms. The disease ran a typical course, and convalescence was slow. Here, then, we have the chain of events complete. A fatal case of diphtheria, from which the germs were cultivated in pure cultures through ten generations, and the inoculation of the animals from which the experimenter himself contracted the disease with development of membrane containing micrococci, which reproduced themselves in cultures.

The question as to the origin of life has been much disputed, and the exponents of spontaneous generation and of the germ theory still continue the contest.

Extremists in the doctrine of evolution cannot sustain the hypothesis that the whole system of animal life is but a growth of one or more original species, changing into or evolving others through methods of development. The long ages of the past show the universality of the law of life, that like produces like.

Neither the agnostic nor the materialist can account for the origin of matter, much less can they account for the origin of mind. Naturalists tell us that while the animal and vegetable kingdoms are reducible to primordial cells; that while there is a time when the embryos of species cannot be distinguished from each other by any essential features, yet the variety of structural forms, and the diversity of physiological functions which cells develop, are always according to the special type and construction of their parent cells; evidencing a unity of plan in their construction and development.

1. The germ theory asserts that no life has been evolved (except in the remotest periods of the earth's history) other than from a living parent or a living germ.

2. The spontaneous generation theory asserts that now, as of old, life does also spring *de novo* from molecular rearrangements of the atoms of dead organic matter.

No authority, except that of experimental work, can weigh a feather in the balance; no *a priori* reasoning can give the victory to either creed. The one condition is, to take dead matter, isolate it from all contact with life, place it

under favorable conditions for development, and watch the result.

The first views founded on experiment and observation, apart from mere philosophical speculation, are those of Needham and Buffon, published in 1748. Needham's theory was that vitality is produced by a force setting particles in motion, which he calls *force végétatrice*. Needham was opposed by Spallanzani, in 1777, who repeated his experiments by methods so precise as to overthrow the convictions based on Needham's labors. Schultz made an important advance by boiling his infusions and using pure air, and was followed by Schwann, Schroeder and Von Dusch. In 1859, Pouchet, one of the most ardent supporters of spontaneous generation, published his work. He does not look on these organisms as originating from dead matter, though he believes that it is the contact of different bodies which gives rise to the development of protoorganisms. Yet their origin is not due to affinity alone; vital force must also come into play, which owes its power to certain unknown concomitant circumstances. The essentials for the production of the new forms are, a putrescible body, water, and air, while heat, light, and electricity favor the process. His experiments were performed very loosely, and are subject to many errors.

Appearing shortly after Pouchet's work and leading to diametrically opposite conclusions, were the researches of M. Pasteur, who begins by attempting to demonstrate the existence of spores in the atmosphere. The greatest blow was given to the views of the heterogenists when Pasteur demonstrated that albuminoid materials are not necessary for the development of bacteria and fungi, but that they can be replaced by crystalline salts, such as phosphates and the salts of ammonia.

The experiments of Prof. Jeffreys Wyman have been largely quoted by the supporters of heterogenesis as proving their view, though Wyman himself expressed no such opinion, having approached the subject with a perfectly unbiased mind. To Prof. Wyman is ascribed great credit by Cheyne, whose results agree with his own.

Dr. Bastian (1872) gives up the theory that organic molecules are derived from previously living molecules and attempts to demonstrate that vital force and living matter may arise *de novo* under the action of the ordinary physical forces—heat, light, and electricity. This change of front on the part of the heterogenists is clearly brought about by the overwhelming evidence produced against Pouchet's views, and more especially by Pasteur's success in cultivating organisms from dust in fluids containing no organic matter.

The limitation of cases of spontaneous generation which has been gradually taking place is very instructive. Beginning with the higher

animals it became more limited, frogs, flies, etc., being by degrees excluded, till now it is only in the case of the lowest forms of life that the doctrine is asserted, and even then only in certain cases.

Not long since the people of Boston were invited to listen to a series of lectures which continues the discussion of the much-disputed question of the origin of life. The lecturer, although announcing himself as a decided opponent of the germ theory, could not agree with the spontaneo-generationists, and offered views somewhat peculiar to himself. His objective point was the so-called "*ambient organic matter*," of which he could give no definition, but in a long series of illustrations of what he meant, he showed it to be synonymous with the *bioplasm* of Dr. Lionel Beale. The term bioplasm, as Dr. Beale says, involves no theory as regards the nature or origin of the matter. It simply distinguishes it as *living*, e. g., a living white blood corpuscle is a mass of bioplasm, or it might have been termed a *bioplast*; a very minute living particle is a bioplast, and we may speak of living matter as bioplasmic substance. It is bioplasm, or ambient organic matter, according to the new view, that is at the bottom of all the functions of life, it having, to a certain extent, a low degree of inherent vitality; and the results of the various experiments that have been performed are due to the ambient organic matter, which has never yet been separated, it was urged, from the germs.

It was argued that the germ theorists can prove nothing till they can isolate an organism on a needle-point and use it for inoculation, after thoroughly washing and drying. Floating dust of the air, he added, is not germs, but ambient organic matter. He also expressed a desire to introduce some ambient organic living matter into the infusions and see what it would do.

Hearing it so strongly urged that we have been mistaken concerning the action and importance of the minute organisms which have made up what they lack in size by the interest they have awakened during the last quarter of a century, it occurred to me that such a theory would be of more value if accompanied by facts based upon actual experiments, but no such experiments were offered to prove the theory, which was allowed to stand by itself. In these days a theory is accepted for what it is worth, and when it relates to science it must be supported by facts. Not considering this theory capable of self-support, and not content to leave the subject in this way, I have still further investigated it.

I am reminded of Prof. Tyndall's experiments with hermetically sealed tubes. One hundred and thirty tubes were used, and to multiply the chances of spontaneous generation they were filled with infusions of the most diverse materials (in all numbering twenty-four). Each tube con-

tained an ounce of liquid and was boiled for three minutes in an oil-bath, and sealed by a spirit lamp during ebullition. Two months later this group of flasks was submitted to the inspection of the Royal Society and not one of them was found to contain life. That the infusions were not degraded by boiling was proved by similar exposed tubes which "resolved themselves with the usual speed into bacterial swarms." Special care had been taken that the temperature to which the flasks were exposed should include those previously alleged to be efficient. The conditions laid down by the heterogenist were accurately copied, but there was no corroboration of his results.

Again, sixty flasks were thus prepared containing strong infusions of beef, mutton, turnip, and cucumbers, carefully packed in sawdust and carried to the Alps, 7000 feet above sea level. Fifty arrived safely, of which twenty-three were opened on a hay-loft, and the other twenty-seven, 200 feet higher, on a ledge overlooking the Aletsch glacier. The fifty flasks, with necks open, were then placed over the kitchen stove at a temperature of 50° to 90° F. In three days twenty-one of the twenty-three opened in the hay-loft were invaded with organisms; but after three weeks' exposure not one of the twenty-seven opened in the free air had become contaminated. No germ from the kitchen air had ascended the narrow necks, the flasks being shaped so as to avoid this contingency.

Sir Joseph Lister's experiments with milk prove a great deal against the view of spontaneous generation. In his attempts to obtain pure unboiled milk, he found that in none of his flasks did he obtain lactic fermentation, but that in all but two (out of some fifty or sixty flasks), organisms of some form or other occurred, these organisms being in many flasks of totally distinct kinds. The fact that no organisms appeared in two flasks, and the great variety developed, prove that they could not have been developed *de novo*; for all being made under the same conditions any change occurring in one due to something inherent in the milk, or due to some physical force acting on it, would have occurred equally in all.

We have then a great number of experiments made by distinguished observers, of which I have quoted only a few, which show that life does not commence in substances unless something living exists in or has access to them. No one will deny the existence of the bioplasmic or ambient organic matter, but I must believe that it plays a far different rôle than was ascribed to it by the lecturer, and I also believe that the *germs* exist and play their part.

If we examine fresh blood serum, the aqueous humor of the eye, white of egg, or milk, we will find, with high powers of the microscope (1000x),

in greater or less quantity masses of varying size and shape, made up of minute, shining, highly-refractive particles, with or without Brownian motion, which have a low degree of inherent vitality, and which are bioplasmic or ambient organic matter. No one with any experience is likely to mistake these for the minute, highly-refractive bodies of uniform size, single or in groups, which we recognize as micrococci or bacteria.

These substances, then, containing the ambient organic matter in sufficient quantity, and being free from germs, were selected for testing in the experiments which I made to see if the extraordinary statements of the lecturer had a basis of fact.

Fresh blood was caught in flasks at the abattoir, as it flowed from the necks of the animals, and was sealed up until the clot had separated. Bulbs (see tables) similar to those mentioned above, sterilized by heat, were then filled with the serum, and to the culture bulbs containing sterilized nutrient fluid, serum was added in varying quantity, and the bulbs were hermetically sealed. Milk was carefully drawn from the cow into a flask sterilized by heat, from which culture bulbs were inoculated. Bulbs were filled and culture bulbs inoculated from the white of an egg still warm from the nest, and also the aqueous humor of the eyes of freshly-killed sheep. The substances introduced into the bulbs were never boiled, because it was argued that the boiling of the infusions is unfair, by rendering them sterilized, barren, and almost inorganic.

These bulbs were kept at a temperature of about 70° F., and examined with the microscope after varying intervals. Of the forty-five bulbs (see tables), forty-four remained perfectly clear and pellucid, and the microscope revealed the same bioplasmic masses as the fresh materials. In only one were there any signs of life, and this a bulb that had been inoculated with serum, was found to be undergoing fermentation, and was swarming with the germs of putrefaction, bacteria termo, proving it to have been accidentally contaminated.

In the control experiments these materials, *exposed to the air*, under the same conditions, give a far different history, as they rapidly underwent fermentation, and then contained, in addition to the same bioplasmic masses, the germs of putrefaction. Such, then, is the effect of bioplasmic or ambient organic matter, *plus* the germs, at a temperature of 70° F. Alone, however, although upon the germinal qualities of it so much has been suggested, not only does it fail to generate life, but it has no power of reproduction, and is at best an organic nutrient material, serving the highest purpose for bioplasmic use, but having in itself absolutely no independent power of growth.

DR. NELSON'S EXPERIMENTS WITH CULTURE BULBS AND BIOPASMIC MATTER.

No.	SUBSTANCE TESTED.	Day Exam.	Condition of Fluid.	Sum.	Sediment	Microscopic Appearances.
1	Serum from sheep's blood.	6	Clear.	None	None	Same bioplasmic masses as fresh serum.
2	" " " " " " " " " " " "	6	"	"	"	" " " " " " " "
3	" " " " " " " " " " " "	6	"	"	"	" " " " " " " "
4	" " " " " " " " " " " "	6	"	"	"	" " " " " " " "
5	" " " " " " " " " " " "	11	"	"	"	" " " " " " " "
6	" " " " " " " " " " " "	16	"	"	"	" " " " " " " "
7	Culture bulb inoculated with serum from sheep's blood.	6	"	"	"	" " " " " " " "
8	" " " " " " " " " " " "	6	"	"	"	" " " " " " " "
9	" " " " " " " " " " " "	6	"	"	"	" " " " " " " "
10	" " " " " " " " " " " "	6	"	"	"	" " " " " " " "
11	" " " " " " " " " " " "	6	Slightly turbid.	"	"	" " " " " " " "
12	" " " " " " " " " " " "	9	Clear.	"	"	addition, active bacteria term very abundant.
13	" " " " " " " " " " " "	9	"	"	"	Same bioplasmic masses as fresh serum.
14	" " " " " " " " " " " "	11	"	"	"	" " " " " " " "
15	" " " " " " " " " " " "	16	"	"	"	" " " " " " " "
16	" " " " " " " " " " " "	17	"	"	"	" " " " " " " "
17	" " " " " " " " " " " "	17	"	"	"	" " " " " " " "
18	" " " " " " " " " " " "	17	"	"	"	" " " " " " " "
19	" " " " " " " " " " " "	17	"	"	"	" " " " " " " "
20	" " " " " " " " " " " "	17	"	"	"	" " " " " " " "
21	" " " " " " " " " " " "	17	"	"	"	" " " " " " " "
22	" " " " " " " " " " " "	17	"	"	"	" " " " " " " "
23	" " " " " " " " " " " "	17	"	"	"	" " " " " " " "
24	" " " " " " " " " " " "	8	"	"	"	" " " " " " " "
25	Serum from sheep's blood	9	"	"	"	bulb inoculated from No. 1 at 9th day.)
26	" " ox's blood	6	"	"	"	Same bioplasmic masses as fresh serum.
27	" " " " " " " " " " " "	6	"	"	"	" " " " " " " "
28	Culture bulb inoculated with serum from ox's blood . .	6	"	"	"	" " " " " " " "
29	" " " " " " " " " " " "	6	"	"	"	" " " " " " " "
30	" " " " " " " " " " " "	17	"	"	"	" " " " " " " "
31	" " " " " " " " " " " "	17	"	"	"	" " " " " " " "
32	Aqueous humor of eye of sheep	6	"	"	"	" " " " " " " "
33	" " " " " " " " " " " "	6	"	"	"	" " " " " " " "
34	Culture bulb inoculated with aq. humor of eye of sheep.	6	"	"	"	" " " " " " " "
35	" " " " " " " " " " " "	6	"	"	"	" " " " " " " "
36	" " " " " " " " " " " "	6	"	"	"	" " " " " " " "
37	Culture bulb inoculated with milk	4	"	"	"	" " " " " " " "
38	" " " " " " " " " " " "	4	"	"	"	" " " " " " " "
39	" " " " " " " " " " " "	4	"	"	"	" " " " " " " "
40	" " " " " " " " " " " "	5	"	"	"	" " " " " " " "
41	Albumen—white of egg	5	"	"	"	" " " " " " " "
42	" " " " " " " " " " " "	5	"	"	"	" " " " " " " "
43	Culture bulb inoculated with albumen, white of egg .	5	"	"	"	" " " " " " " "
44	" " " " " " " " " " " "	5	"	"	"	" " " " " " " "
45	" " " " " " " " " " " "	5	"	"	"	" " " " " " " "

RÉSUMÉ OF DR. NELSON'S EXPERIMENTS WITH CULTURE BULBS AND BIOPLASMIC MATTER.

SUBSTANCE TESTED.	Day Exam.	No. of Exp'ts.	Total No.	Microscopic Appearances
Bulbs filled with serum from sheep's blood.	6 9 11 16	4 1 1 1	7	Same bioplasmic masses as fresh serum. " " " " " " " " " " " "
Culture bulbs inoculated with serum from sheep's blood. . .	6 9 11 16 17 8	5 2 1 1 8 1	18	Same bioplasmic masses as fresh serum, and one in ad- dition active bacteria terms very abundant. Same bioplasmic matter as fresh serum. " " " " " " " " " " " " " " " "
Bulbs filled with serum from ox's blood.	6	2	2	Same bioplasmic masses as fresh serum.
Culture bulbs inoculated with serum from ox's blood. . . .	6 17	2 2	4	Same bioplasmic masses as fresh serum. " " " "
Bulbs filled with aqueous humor from eye of sheep.	6	2	2	Same bioplasmic masses as fresh serum.
Culture bulbs inoculated with aqueous humor.	6	3	3	Same bioplasmic masses as fresh serum.
Culture bulbs inoculated with milk	4 5	3 1	4	Same bioplasmic masses as fresh serum. " " " "
Bulbs filled with albumen, white of egg.	5	2	2	Same bioplasmic masses as fresh serum.
Culture bulbs inoculated with albumen.	5	3	3	Same bioplasmic masses as fresh serum.
			45	

BIBLIOGRAPHY.

- | | |
|---|--|
| <p style="text-align: center;">BIBLIOGRAPHY.</p> <p>Bastian. "The Germ Theory and Spontaneous Generation,"—<i>Popular Science Monthly</i>.</p> <p>Beale, Lionel S. "Disease Germs."—<i>N. Y. Medical Journal</i>.</p> | <p>Belfield, Wm. T. "Relation of Microörganisms to Disease."</p> <p>Braidwood and Vacher. "Life History of Contagium."—<i>Eclectic Magazine</i>.</p> <p>Carpenter W. B. "The Germ Theory of Zymotic Diseases."</p> |
|---|--|

- Cheyne, W. Watson. "Antiseptic Surgery."—*British Medical Journal*.
- Dreschfeld, Julius. "Microorganisms and Relation to Disease."
- Fokker, Professor. Transactions International Medical Congress.
- Fol, H. "Microbes in Science."
- Formad, Henry F. "Germ Theory of Disease."—*Medical Bulletin*.
- Gradle, H. "Germ Theory of Disease."—*Popular Science Monthly*.
- Horley, George. Transactions International Medical Congress.
- Koch, Robert. "Traumatic Infective Diseases."
- Lister, Sir Joseph. Transactions International Medical Congress.
- Lowe, John. "Germ Theory."—*Braithwaite's Retrospect*.
- McNamara, C. "Asiatic Cholera."—*Brit. Med. Jour.*
- Olivier, Louis. "Microscopic Life in the Air."—*Popular Science Monthly*.
- Pasteur, M. Louis. "Germ Theory and Spontaneous Generation."—*Popular Science Monthly*. *Comptes Rendus des Séances de l'Académie*.
- Pelo, Dr. J. B. de Lacerda. "Bacillus of Beriberi."—Reviewed in *Science*.
- Pilcher, Lewis S. "Treatment of Wounds."
- Ranvier L. Laboratoire d'Histologie.
- Sternberg, Geo. M., and Magnin. "Bacteria."
- Smart, Andrew. "Germs, Dust and Disease."
- Tyndall, John. "Floating Matter of the Air."—*Popular Science Monthly*.
- "Germ Theory and Spontaneous Generation."—*Nature*.
- Watson, B. A. "Antiseptic Wound Treatment."
- Whitney, Wm. F. "Recent Progress in Pathological Anatomy."—*Boston Medical and Surgical Journal*.

MEDICAL PROGRESS.

ON THE IDENTITY OF ERYSIPELAS AND ACUTE LYMPHANGITIS. — VERNEUIL and CLADO, after many microscopical experiments, say on this subject: Erysipelas and acute lymphangitis are two affections, closely related to each other, which are best and most frequently observed on the surface of the body, the nature and relations of which have often been discussed without all perfectly agreeing on these points. Some consider them one and the same disease, or at the most two forms of the same disease; others separate them entirely, although admitting that they may exist at the same time and become one.

Those taking the former view (among whom are Verneuil and Clado) advance the following arguments:

1. They have the same anatomical seat in common; lymphangitis occupies the trunk, and erysipelas the branches of the lymphatic system; both invade the ganglions.
2. The similarity in the pathological process; the two affections present, wherever they are visible, the principal symptoms of a true inflammation.
3. The same starting-point in an interruption of the continuity of the skin surface.

3. The same symptoms; chills, vomiting, rapid rise of temperature, etc., with the same general symptoms of a sudden intoxication.

5. The inability, in a great many cases, of the physician to say whether he has to do with lymphangitis or with erysipelas, or with a combination of both, as the disease begins sometimes in one form, sometimes in the other.

To these numerous and powerful arguments Messrs. Verneuil and Clado add another which, based upon microscopical observation, is absolutely decisive: the discovery in lymphangitis of the erysipelas microbe. This discovery, in the cases which the authors observed, combined with the results of the pure cultures and inoculations made by them, led them to the following conclusions:

1. Erysipelas and lymphangitis are simply different forms of the same contagious, infectious, parasitic disease.
2. Their agent is a special microbe which may be easily recognized, isolated, cultivated and inoculated upon animals.
3. This microbe, which had been discovered and described in erysipelas only, is also found in acute lymphangitis with all its proper qualities and characteristics.
4. It establishes, therefore, the absolute identity of two affections which, by numerous authors, have been considered so far as different diseases. — *La Semaine Médicale*, 1889, No. 16.

PAGET'S DISEASE OF THE NIPPLE.—DR. J. DARIER declares that follicular psorospermiosis is not the only affection of the skin caused by parasites of the class sporozœ. Another, which differs from the first named and is caused by another kind of psorospermæ, is Paget's disease of the nipple. In 1874 Paget called attention to a chronic affection, apparently eczematous, of the skin of the mamma and aureola, which is almost always followed by cancer of the breast: The numerous authors who have since published such cases, enumerate as characteristics of the eruption which distinguish it from common eczema: its limitation by a well defined line, the parched induration of the skin, the absolute incurability, and finally and especially the complication, after a shorter or longer period, by a cancer. Histological examinations by Bultin, Fhın, Duhring and others did not explain the nature of the affection, which some have since regarded as an eczema which extended to the milk channels, and others as an unknown disease *sui generis*. Darier thinks that the following facts will render it possible to understand the peculiarities as yet unexplained of this type of disease.

If some of the scales are taken from the diseased surface and dissolved in water or in a solution of iodide, whether directly or after maceration in diluted ammonia or bichromate of ammonia, small round bodies, surrounded by a refracting

membrane with double contour, are at once discovered among the epithelium cells and often in their interior. These bodies have a diameter which is larger than that of the cells or equally large; their membranes contain a mass of protoplasm or of more or less numerous corpuscles. These bodies are always found in sections or fragments of the excised skin, in all the layers of the epidermis, and especially in the glandular prolongations of the epidermis. The character of these bodies admits the conclusion that we have to do with psorospermæ or coccidix. They are present in all stages of evolution; a mass of protoplasm, at first naked, subsequently surrounded by a membrane, divides itself later on into numerous granules enclosed in a cyst.

The epithelioma of the mamma contains similar parasites, and also a large number of elements which cannot with certainty be distinguished from epithelial cells, but which are often enclosed in other cells. Bultin, who saw this in 1876, thought it an instance of endogenesis. The parasites are probably more numerous than they appear to be. That they play a part in the formation of the tumor seems probable, since there is in each lobe a certain number of coccidix in their characteristic form.

It is a well-known fact that the presence of these organisms in the tissue of the epithelium produces a budding and extension of it; it is known from the psorospermiosis of the gall ducts of the rabbit, and Darier demonstrated it in the follicular psorospermiosis in man. Mr. Albarran quite recently exhibited epithelioma containing coccidix, and further demonstrations of this kind will soon be quite numerous. It is, therefore, logical to suppose that the parasites which produce the epidermic lesion in Paget's disease of the nipples, cause also the epithelial growth of the milk channels which constitutes the epithelioma.

The above facts appear important from different standpoints. Paget's disease of the nipple is a parasitical affection, a psorospermiosis; its diagnosis becomes easy by microscopical examination of scales such as Darier made in four cases. Then also, this disease furnishes a first indication of the nature and the pathogeny of certain epitheliomas. —*La Semaine Médicale*, 1889, No. 16.

DURATION OF VITALITY OF TYPHUS AND CHOLERA BACILLI IN THE FÆCES.—PROFESSOR DR. J. UFFELMANN, of Rostock, on the basis of experiments tending to solve this question, which largely agree with those made by Kitasato, has come to the following conclusions:

In human fæces, that is in human fæces and urine, the cholera bacillus retains its vitality for four days at the utmost, if these fæces are kept, as usual, in privies or in large kegs or tubs. As a rule it dies much sooner, generally with the second or third day, often even on the first day.

It seems to retain its vitality longer in a mixture kept at a temperature of more than 16° than in fæces kept at a lower temperature than 9°. It can also be found for a longer time in those fæces to which it was added in large numbers, than in those which contained but few. Whether the addition of urine hastens the end of the bacillus the author is not able to say. But the fact is of importance that it retains its vitality for at least twenty-four hours.

As regards the typhus bacillus, it was found to possess great power of resistance. Under certain conditions it retains its vitality for four months; it may even be assumed that it may last much longer, even since it existed in certain samples in large numbers at the expiration of that period. But its vitality in the fæces is not always the same; different temperature seemed to have a decided effect, experiments showing that in fæces kept at a temperature of 17°, or more, the bacilli increased in number, whereas with a temperature of less than 10° an increase is not to be thought of. —*Centralblatt für Bakteriologie und Parasitenkunde*, 1889, No. 16.

MENTHOL IN ASTHMA.—DR. TH. JORES, of Kastellaun, had been treating since October, 1888, a lady 50 years old who had had, in the summer of 1888, several large polypous growths removed from her nose by a specialist. When Jores took charge of the patient her principal trouble consisted in periodically (every two or three days) occurring congestions to the head, combined with difficulty in breathing. Hand- and foot-baths, purging, applications of several leeches to both sides of the proc. mastoid, gave no relief.

Gradually the congestion subsided, whilst the difficulty in breathing increased. Against these attacks, which were purely asthmatic, Jores used in the course of treatment a long series of drugs, all of which, however, were effective for a few days only. A communication in the *Allgemeinen Medicinischen Central-Zeitung* which he saw in December, regarding the favorable effect of menthol in lung disease (which effect was said to be especially on the secretion of mucus), induced him to use menthol. Whilst before the use of the drug (a 20 per cent. solution of menthol in ol. oliv.) auscultation of the lungs showed everywhere crackling and rattling noises, the trouble completely disappeared as by magic after a few inhalations; auscultation showed perfectly normal breathing, heart-beat unchanged, pulse full and strong. Patient, on being asked, simply remarked that her head felt sometimes benumbed, "as though she had inhaled chloroform without taking enough of it." Since its first application (January 2, 1889), the drug has proven effective in every attack, always with prompt success. —*Therapeutische Monatshefte*, 1889, No. 4.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, MAY 25, 1889.

A BRIEF REVIEW.

The records of the Association for forty years are nearly written. At Newport, on the 25th of June next, its Fortieth Annual Meeting will be convened. A few words with reference to its history and purposes will be of interest to those who, during later years, have become members of the Association.

In 1845 the New York State Medical Society, by resolution, "recommended a *National Convention of Delegates*, from medical societies and colleges in the whole *Union*, to convene in the City of New York, on the first Tuesday in May, 1846," and in the preamble set forth the objects of the meeting. In answer to that recommendation a National Convention of Delegates from medical societies and colleges assembled in the City of New York, May 5, 1846, and Dr. Jonathan Knight, of New Haven, Conn., was made chairman. Sixteen of the United States were ably represented in this Convention. A series of important resolutions was introduced, and after full consideration it was determined to refer them to special committees, who should report upon them at a second Convention to be held at Philadelphia during the following year.

On May 5, 1847, this second Convention assembled in Philadelphia, and Dr. Knight, of Connecticut, was continued chairman. The Convention was largely attended by delegates from nearly every State and Territory, and continued in session for three days. The various committees presented a series of able reports upon the resolutions

which had been referred to them severally at the previous meetings. These reports were fully discussed and, with such modifications as were deemed judicious, were adopted.

At the evening session of the third day of the Convention, May 7, 1847, it was unanimously "*Resolved*, That this Convention do now resolve itself into THE AMERICAN MEDICAL ASSOCIATION, and that the officers of the Convention continue to act as officers of the Association, until others are appointed."

A committee representing twenty-one States and the District of Columbia was appointed to nominate permanent officers for the Association. Nathaniel Chapman, of Philadelphia, was the first President elected. All the various officers were appointed, the committees were named, the business of the Association completed, and the Association adjourned to hold its first annual meeting in Baltimore in May, 1848.

The subsequent places of meeting and the Presidents in order have been as follows :

- 1848. Baltimore, A. H. Stevens, New York.
- 1849. Boston, J. C. Warren, Massachusetts.
- 1850. Cincinnati, R. D. Mussey, Ohio.
- 1851. Charleston, James Moultrie, South Carolina.
- 1852. Richmond, B. R. Wellford, Virginia.
- 1853. New York, J. Knight, Connecticut.
- 1854. St. Louis, C. A. Pope, Missouri.
- 1855. Philadelphia, Geo. B. Wood, Pennsylvania.
- 1856. Detroit, Zina Pitcher, Michigan.
- 1857. Nashville, Paul F. Eve, Tennessee.
- 1858. Washington, H. Lindsley, District of Columbia.
- 1859. Louisville, Henry Miller, Kentucky.
- 1860. New Haven, Eli Ives, Connecticut.
- 1861. No meeting.
- 1862. No meeting.
- 1863. Chicago, Alden March, New York.
- 1864. New York, N. S. Davis, Illinois.
- 1865. Boston, Constitution amended. Same officers continued.
- 1866. Baltimore, D. H. Storer, Massachusetts.
- 1867. Cincinnati, H. F. Askew, Delaware.
- 1868. Washington, S. D. Gross, Pennsylvania.
- 1869. New Orleans, W. O. Baldwin, Alabama.
- 1870. Washington, Geo. Mendenhall, Ohio.
- 1871. San Francisco, Alfred Stillé, Pennsylvania.
- 1872. Philadelphia, D. W. Yandell, Kentucky.
- 1873. St. Louis, T. M. Logan, California.
- 1874. Detroit, J. M. Toner, District of Columbia.
- 1875. Louisville, W. K. Bowling, Tennessee.
- 1876. Philadelphia, J. Marion Sims, New York.
- 1877. Chicago, H. I. Bowditch, Massachusetts.
- 1878. Buffalo, T. G. Richardson, Louisiana.
- 1879. Atlanta, Theophilus Parvin, Indiana.
- 1880. New York, Lewis A. Sayre, New York.
- 1881. Richmond, J. T. Hodgen, Missouri.

- 1882. St. Paul, J. J. Woodward, U. S. Army.
- 1883. Cleveland, Jno. L. Atlee, Pennsylvania.
- 1884. Washington, Austin Flint, New York.
- 1885. New Orleans, H. F. Campbell, Georgia.
- 1886. St. Louis, Wm. Brodie, Michigan.
- 1887. Chicago, E. H. Gregory, Missouri.
- 1888. Cincinnati, A. Y. P. Garnett, Dist. of Columbia.
- 1889. Newport, W. W. Dawson, Ohio.

These annual meetings have been largely attended by prominent medical men representing every section of the United States. The division of the members into Sections for the purpose of special work was early found to be a necessity. The mornings are given to matters requiring consideration in general session; the afternoons to Section work. Thus ample provision is made for the presentation of papers, and for discussion in each of the special departments. The interests of the profession at large, as well as of writers themselves, cannot be better served than by giving to these several Sections the cordial support and the best service that the profession can command. Every provision for the presentation of papers in the different departments of medicine and surgery, and for their full discussion, is as ample here as can be made for special sessions elsewhere.

Among the many important and valuable results which the Association has labored to accomplish we may name:

First. By the early adoption of a Code of Ethics which commends itself to the approval of all medical men, it has clearly defined the rules that should govern, not only among members of the profession, one with another, but also their relations with the people.

Second. It has fostered fraternal fellowship, and helped to bring into close and friendly relation the medical men of all parts of this broad Union.

Third. It has always been the earnest advocate of a higher standard of medical education and in every way possible has sought to stimulate original investigation.

Fourth. Its influence has always been helpful to our medical colleges—and it has favored the maintenance of medical societies, both State and local, everywhere.

Fifth. For the purpose of assuring the closest possible relations with the masses of the profession—it even commits its own management to their delegates, as they shall come fresh from the local societies to express their will, from year to

year, rather than to permanent members, who might in time misrepresent their constituencies.

The Association is in accord with the genius of American institutions. It is National in its representation, and never sectional in interests. It is in no sense exclusive, and yet makes ample provision, for those who by reason of talent and culture, may best serve the profession as instructors and guides. More than at any previous time it commends itself to the cordial support of the profession, and it is to be hoped that it will continue to command the services of the ablest men in the profession for the furtherance of the interests of Medicine in America.

OUR MEDICAL COLLEGES.

In another department of this number of THE JOURNAL, is published a tabulated list of the medical colleges in the United States and Canada, and their requirements and courses. This table has been prepared for the purpose of showing, as well as possible in a limited space, the present condition of medical education in English-speaking America. Notwithstanding the fact that four sets of circulars were sent out for information, on March 9, 29, April 15 and 25, some of the colleges failed to return the circulars properly filled out.

On examining the table one can easily see that in the United States especially, there is the greatest diversity in the medical college curricula. The Canadian curricula are, as a rule, uniform. The requirements shown vary from the first to the last column of the table. It is shown that medical education in this country is in a heterogeneous state. We have colleges for the uneducated and for the educated student; colleges for the would-be doctor fresh from the plow-handle; colleges in which the pupil may patch up his educational defects—to the satisfaction of himself and the faculty; and from this class up through a series of gradations to the college that requires the matriculant to have the general education without which no one is ready to study medicine. We have colleges from which a student may be graduated without having seen a patient except over the rail of the amphitheatre; from which the pupil may receive a diploma—a license to practice in many States—without being able to make the simplest urinary analysis, without hav-

ing seen a case of labor, without having received instruction in applying the simplest surgical dressing or bandage, without the ability to recognize normal tissue under the microscope, or by the naked eye, without the ability to make a post-mortem examination. It is gratifying to know, however, that this class includes but a small number of colleges.

The readers of *THE JOURNAL* are probably familiar with the admirable address of PROFESSOR OSLER before the Medico-Chirurgical Faculty of Maryland on "License to Practice," published in *THE JOURNAL* of May 11. But as this issue will go to a large number that have not had the opportunity of reading the address, we may be allowed to quote from it. In regard to raising the standard of requirements in the colleges he says:

"Too often college faculties seem stricken with timidity in the presence of suggestions to lengthen the curriculum and to raise the standard. Yet, a superficial study of the history of the movement since 1871 and 1872, when Harvard¹ so nobly took the lead, should be convincing to all that, even from the lowest considerations, the advance should be successful. You have but to look to the condition of the schools which have been in the van, to see that the bread cast upon the waters has already been found. I do not say that these schools are in all instances the most prosperous numerically. Heaven forbid; that is not a standard of merit. But, take the laboratory equipment, the measure in which they fulfil medical requirements, the practical teaching and the development of clinical instruction, and I say without fear of contradiction, that these schools have met with an ample and a just reward. And yet these are the very schools which clamor loudest for further advance, showing how dangerous it is to arouse the slumbering conscience and to abandon the conviction that a two session course is sufficient for the average American student. But in spite of all that has been done, in spite of the agitation which has been so active during the past ten years, the sad truth must be told that a large percentage of doctors are graduated annually after only two sessions of study.

"On paper, the two session schools almost universally demand three years; one of which, it is stated, may be with a physician. Now, it is notorious in these schools that a large majority of the men receive the degree at the end of the second college year, and it is just as notorious that not 5 per cent. of the cases in which a preliminary year of study has been passed with a physician is a *bona fide* period of medical instruction. It practically amounts to this, that a man enters without any fair preliminary test as to elementary education, say on the first of October of the present year, and eighteen months from date, or rather seventeen months, sometime in March, 1891, he will be let loose upon the commonwealth. Eighteen months in which to master one of the highest, as it certainly is one of the most difficult of the professions which man is called upon to practice! That, gentlemen, these are facts, sad facts, each one of you knows. Yet so blind do men seem in this matter, so wedded to this pernicious system, that I have known physicians in large practice, able, cultivated men, contributors to medical literature, standing high in the esteem of their brethren, permit

their sons to follow out the curriculum. Picture, if you can, the mental condition of such a graduate; an incoherent jumble of theories, a chaotic assortment of what he would call practical tips. But this question has its tragic side, which completely overshadows everything else. It makes one's blood boil to think that there are sent out year by year scores of men called doctors, who have never attended a case of labor, and who are utterly ignorant of the ordinary everyday diseases which they may be called upon to treat; men who may never have seen the inside of a hospital ward, and who would not know Scarpa's space from the sole of the foot. Yet, gentlemen, this is the disgraceful condition which some school men have the audacity to ask you to perpetuate; to continue to intrust interests so sacred to hands so unworthy. Is it to be wondered, considering this shocking laxity, that there is a widespread distrust in the public of professional education, and that quacks, charlatans and impostors possess the land?

"But the handwriting is on the wall, the interpretation has been read, and the prophecy indeed is in course of fulfillment. It needs not the vision of a son of Beor to advertise that within ten years in scarcely a State of the Union will the degree carry with it the privilege of registration; and with this removal of the kingdom from the schools will dawn a new era for the profession in this country. This will happen when unrestricted competition between the colleges, and the total absence of professional and State restraint are things of the past."

In regard to the regulation of medical study and practice, Professor Osler mentions three courses that are open: 1. A continuance in the plan at present, widely prevailing, which makes the college the judge of the fitness of the candidate; and State supervision is only so far exercised that the diplomas are *vised* and registered, if from legally incorporated schools. 2. The appointment by the State, or by parties so deputed, of a Board of Examiners which shall, irrespective of diplomas, examine all candidates for the license. 3. The organization of the entire profession in each State into an electorate which shall send representatives to a central parliament, having full control of all questions relating to medical education, examination and registration. The second and third plans are undoubtedly the best of the three.

"Under the second plan the entire question of registration is placed in the hands of examiners, appointed by the Governor or by the State societies. Such a board to be effective must constitute the only portal to practice. The practical working, as shown in North Carolina, Virginia and Minnesota, presents no difficulty, and it constitutes an effective barrier against the inroads of poorly qualified graduates. Within a few years this measure will be widely adopted. It has certain advantages in a simple mechanism, and in clearly-defined duties. But the powers are to be limited, and there is no control of education, preliminary and special, such as comes strictly within the power of the profession in each State."

In regard to the third plan, Dr. Osler says:

"Theoretically, there can be no question (particularly in democratic communities) that a State Board should be elective, not appointed by the Governor or the societies. An elective board is in reality a medical parliament, which should take cognizance of all matters relating to

¹ If Harvard took the lead it was only after the full three years' graded course had been in operation several years in the Chicago Medical College.

medical education, and, perhaps, though of this I am not so sure, of questions of public health within the State. The assembly districts or other territorial divisions which might be made, would send one, or perhaps two representatives to the board (depending upon the professional population in each district). The electors would be constituted by all practitioners, irrespective of schools, which had registered at a certain date. A man who had practiced, even without a diploma, for a certain time would, under these circumstances, have to be recognized and permitted to register. The Governor of the State would issue the first warrant for the election, which would subsequently be the prerogative of the executive of the board. It might be necessary, at first, to have, from each district, members returned from at least three of the divisions which at present constitute practitioners. The representation should be *per capita*, the number of constituents in each electorate to be previously arranged. The term of the board should be, at least, four or five years, and members should be eligible for reelection. Conducted by ballot there should not be the slightest difficulty in carrying out such an election. There would be, of course, active canvassing, and, perhaps, many nominated from one district. Though there would be opportunities for political trickery and gerrymandering, I think, on the whole, it would be found that an election could be conducted with tolerable purity. The universities and schools would have full representation on the board. To such an organization, I believe, might be intrusted the control of all matters relating to medical education in the State. It would correspond to the law societies, and to the synods and conferences of the various religious denominations. The powers of such a board would be accurately defined by legislation, and should relate, first, to preliminary education; secondly, to the examination and registration of candidates for the license to practice; and thirdly, the control of all matters relating to discipline with the profession. The necessary expense would be met—first, by the fees paid by the candidates for examination; secondly, by a small annual tax levied upon all registered practitioners. Such a body could look forward hopefully to a permanent establishment in each State, with buildings suitably equipped for examination, and with every possible provision for conducting, in an orderly and systematic manner, the business of the profession."

We have quoted thus extensively from Dr. Osler's address because his suggestions are of the highest importance, and many will now read them that did not see the number of *THE JOURNAL* in which they were published.

THE PROGRAMME OF THE ANNUAL MEETING.

In this number of *THE JOURNAL* a Programme of the Fortieth Annual Meeting of the Association is given, with, in addition, much information about Newport, where the meeting will be held from June 25 to 28. The programme assures a most interesting meeting, of much scientific value. The officers of Sections deserve praise for the labor that they have freely expended in securing so large and so excellent a series of papers. The Committee of Arrangements also is to be commended for the preparation that they have

made to accommodate the Association with its numerous Sections.

The social part of the meeting has not been forgotten. One of the pleasantest features planned by the Committee of Arrangements will be a steamboat excursion on the fourth day of the sessions, given by the Rhode Island Medical Society, to Providence, when the Rhode Island Hospital and Butler Hospital for the Insane will be inspected, and an old-fashioned clambake will be enjoyed at a shore resort on the way back to Newport.

SPECIAL ARTICLE.

OUR MEDICAL COLLEGES.

(Special Report for *THE JOURNAL*.)

BY WM. G. EGGLESTON, M.A., M.D.,
OF CHICAGO, ILL.

In a learned profession, in which the members must continue to learn more and more to be fit to remain in it, there is no place for an uneducated, badly educated, or miseducated person.

In 1880 there were 83,436 physicians, or persons calling themselves physicians, in the United States. Since 1880 there has been an annual increase of more than 5.5 per cent. (not including the increase from foreign increment), while the annual increase of the population is less than 2 per cent. The annual death-rate of physicians is probably a little higher than that of adult males engaged in all other occupations. "It will be within bounds," says Dr. John H. Rauch, "to say that the excess of the percentage of new graduates over the increase of population represents the number of unnecessary recruits to the ranks of the profession every year."

What becomes of the medical graduates? Dr. Rauch, Secretary of the Illinois State Board of Health, shows that more than 7 per cent. of them fail as practitioners, and seek other modes of obtaining a livelihood, within a period of less than ten years after beginning practice. In Chicago, for example, in 1880 certificates from the Illinois State Board of Health were issued to 172 newcomers. In 1885 only 84 of these remained—a loss of 51 per cent. Some of these, of course, removed to other parts of the State; but there could scarcely have been such an hegira as to remove 51 per cent. of a certain number of persons engaged in an occupation within five years, had all been engaged in an occupation suited to them, and for which they were suited.

Dr. Rauch says (1886): "There are from 1,500 to 2,000 physicians in the State of Illinois more than are necessary to supply the legitimate

demands for professional services, and who are not earning a comfortable livelihood from legitimate professional exertion. And what is true of Illinois is probably true of every State in the Union."

From 1877 to 1888 there were 39,910 new graduates in medicine of American colleges (of all kinds), exclusive of Canadian colleges; and when we add to this number the non-graduates that began practice in that time, and the foreign increment, the number that began practice between 1877 and 1889 is most probably increased to 42,000—probably a low estimate. Of these not less than 2,500 have found that they made a mistake in entering the profession. Estimating that these studied medicine for two years, there was a waste of time of at least 5,000 years, and of certainly more than \$2,400,000. More than this, 2,500 men had to begin life over again, after having failed once.

The number of physicians in the United States at this time is not less than 112,500 (there are probably 115,000), which gives one doctor to every 533.33 inhabitants. In 1880 the rate was 1 to 601.12. Following is a comparison of the ratio of physicians to population in some of the European countries and in the United States:

Russia (in Europe)	16 : 100,000.
France	29 : 100,000.
Germany	32 : 100,000.
Austria	34 : 100,000.
United Kingdom	61 : 100,000.
United States	187 : 100,000.

It has been said that more than 7 per cent. of the whole number of medical graduates fail as practitioners, and seek other modes of obtaining a livelihood. Non-graduates, says Dr. Rauch, fall out in much larger proportion than the graduates, and the graduates of three-course schools show the smallest percentage of loss, either by removal from the State (Illinois) or by abandonment of practice. This is certainly a significant statement. Seven per cent. is far too large a proportion of men to abandon a profession that requires special and high training. It is also significant that between 1880 and 1886, 1,060 physicians left Illinois after having registered for practice in the State.

There were in round numbers, on July 1, 1877, an aggregate of 7,400 persons practicing medicine in Illinois. Of these about 3,800 were non-graduates, and comprised all classes, from those that had assumed the name of "Doctor" without any medical study or education whatever—often without any other form of education—up to practitioners that had attended one or more courses of lectures, had had some practical anatomy instruction and hospital experience, but had been unable to complete a full term of study or had failed to graduate. The following table gives a compara-

tive exhibit of the status of the profession on July 1, 1877, and July 1, 1887:

Comparison of the total number and classes of Physicians in Practice in Illinois July 1, 1877, and July 1, 1887.

	July 1, 1877.	July 1, 1887.
Number engaged in practice	7400	6160
Graduates and Licentiates	3600	5704
Non-Graduates	3800	476
Percentage of Graduates and Licentiates	48.6	92.3
Percentage of Non-Graduates	51.4	7.7

The proportion of graduated physicians in the State is now nearly double that of ten years ago, and the attainments and qualifications of the practitioners are very much better, owing to the increased thoroughness of the colleges, the longer terms of study, and higher standards of education, resulting largely from the efforts of State Boards of Health, in which efforts the Illinois Board was the pioneer.

The opinion is growing that the day will come when the people of "these nations" of the United States will demand that the National Government take all general educational matters and all matters of public health under its immediate jurisdiction, and will make a Constitutional amendment to that effect. Certainly, if we are one nation and not between three and four dozen, these matters should be under national, not local control. We may agree with Mr. Edward Eggleston that "we must keep the imperial government of the United States for imperial purposes."¹ But these are imperial purposes, because affecting the whole people. It certainly does not seem to be in accordance with any ideas of national welfare that one State without health laws should be a constant menace to the adjoining States that have good health laws. From the standpoint of utility and necessity it is difficult to see any argument in favor of having three dozen pieces of machinery to do work that can be better done by one piece, nor can we see why citizens of one State should suffer remediable wrongs to which the people of the adjacent State are not subjected.

The person in the ordinary walks of life is not able to decide as to the abilities and skill of physicians. He cannot examine the wares of the physician—his services, his skill and knowledge. He cannot price and examine the goods he needs. He must assume that the physician offering for practice is competent and honest. But the State has no right to assume any such thing; it should know before the physician is allowed to practice, and after he begins practice he should be kept up to the mark. The State does not assume that the person wishing to act as a pilot has the necessary knowledge of the waters through which he is to steer vessels; it finds out whether he is competent before he is allowed to practice that calling. The incompetent physician has the advantage of the pilot—and of the public. His errors are not

¹The Century, September, 1887.

so readily detected, and he does not damage tangible property. People will stand all manner of tamperings with their health and lives, but their purses must not be injured.

When it is said that graduates of three-course schools show the smallest percentage of loss by abandonment of practice (as compared with non-graduates and the graduates of two-course schools), we have the key to the whole matter. Dr. Rauch says: "I have followed up, with especial interest and care, the careers of seven hundred and eighty-nine out of one thousand physicians who studied four years and attended three terms before graduating. These are, with few exceptions, the successful and prominent members of the profession in the different communities in which they reside. They are well equipped by general education, by an ample period of professional study, by didactic and clinical instruction, and by hospital practice. They are successful, as a rule, because they have fitted themselves to command success."

The man that enters upon the practice of medicine after a two years' course of study is handicapped from the very start. At this time, when there is a large number of three-course medical colleges, it must be assumed that when a student enters a two-course college he does so for some special reason; because he has not the money to take him through three courses, or because he wishes to make the practice of medicine a business merely, without regard to the high and sacred duties of the calling, or because he knows that his general education is deficient, and that a two-course school can be graduated from more easily. There are a few cases also, in which a student attends a two-course school with the determination of attending a third, clinical, course elsewhere.

Until recently the recognized course of study of medicine in this country was one year of reading medicine and one or two courses of lectures. Beyond exceptional cases the one year now spent in reading medicine under a preceptor is one year lost, with the gain of slovenly methods of study. If a young man, wishing to spend three years in the study of medicine, can afford but two courses of lectures, it is far better that he take one course first; then read a year, and then take his second course. In this way he will learn during the first year how and what to study at home, which he does not learn under the average preceptor. But even in this way the student cannot learn enough of medicine to go out as a competent practitioner. The graduate of the two-course school too seldom has sufficient training to appreciate the nobility of his calling, and is likely to view it too much from the dollar-and-cent standpoint.

Medicine is so broad, and so continuously broadening, that at least three years of medical study are necessary to prepare the student for prac-

tice; and more than three years, if there be defects in his general education. By "general education" is not meant the ability to read Latin at sight, nor to solve problems in algebraic geometry or differential and integral calculus. The brain-tools that a student needs for entering upon the study of medicine to-day are a thorough knowledge of English, a good working knowledge of chemistry, physics (the sciences), German and French, with some knowledge of Latin and Greek. These tools he must have in order to carry on his work properly and with advantage to himself and the public. The methods, the periods and the tools of study of thirty years ago are now inadequate, and students that are using them are not fitted for practice. The good standard of thirty years ago is now a low standard, and this, and the absence of uniform legal requirements for the study and practice of medicine are almost exclusively responsible for the present over-crowded state of the profession, and for the many failures of the men entering it.

It may be asked why there is such a multitude of medical colleges in this country. From the standpoint of necessity one hundred and eighteen colleges, of all kinds, is a vast number for a country containing about sixty million people. One of the American methods of "founding" a medical college is thus described by Dr. S. Guttman, in Dr. Paul Börner's "Reichs-Medicinal-Kalendar für Deutschland auf das Jahr 1888:" "Um ein College zu gründen, vereinigen sich gewöhnlich mehrere Aerzte, von denen jeder ein Fach der Medicin als Docent übernimmt; oft finden sich auch reiche Leute, welche ein College stiften (häufig nur, um so ihren Namen der Nachwelt zu erhalten)! Der Gouverneur des betreffenden Staates ertheilt dann die Erlaubniss zur Eröffnung der Schule. Damit hat dann auch jedes einzelne College das Recht, Diplome auszustellen."

The medical colleges should be placed beyond the temptation of bidding for students and fees by offering low standards, short courses and easy examinations. The surest way to raise medical education to the proper standard is to have a required standard for admission to the colleges, fixed by law, and a law that covers the entire territory of the United States; a required and fixed number of courses in the colleges, and a required number of examinations, without passing which no student should be allowed to proceed; a required number of practical courses; and by taking the examining and licensing power out of the hands of the professors of the colleges. Every one intending to practice medicine should be required to register as a student of medicine at a stated time before entering any medical college, and in order to be registered he should be required to show that his general education and his character will warrant his admission to registration.

The licensing and examining power should be vested in State Boards of Medical Examiners, who should be elected by the Medical Societies of the separate States, but never appointed by political power. A license from one State Board should be good for any State or Territory.

A good deal has been said by physicians (especially by those that seem opposed to legislative interference with medical education and the medical colleges), about the law of supply and demand. The law of supply and demand has nothing to do with the production of medical graduates, and chiefly for the reason that the public does not purchase its supply from the manufacturers. Could the medical colleges go into the market and offer so many first-class, or so many second-rate graduates, as if they were a lot of shoes, at a certain price, discount for cash, and with a certainty of gain to themselves if the whole crop should be sold, and a certainty of loss if it should not be sold, then demand would regulate both supply and quality. But such is not the case; the college takes the student's money, gives him a diploma and turns him adrift, regardless of what becomes of him afterwards. Supply and demand have no more to do with the regulation of the number of graduates than has the free agency of potatoes to do with their production and growth.

To a certain extent there is a supply and demand system that is arousing the low-grade colleges of the country to a sense of their duty. Intelligent students, and those that know of the medical laws of the States in which they intend to practice, are beginning to see the necessity of obtaining their medical education in the higher-grade colleges. There are, however, a great many students that only know that they wish to become doctors, and as soon as possible. The diploma is their chief end and aim, without regard to the amount of knowledge they should have. Such men do not think, nor do they know, that they are handicapping themselves for life.

There is a demand for high-grade medical men (that is, there is always room for them), and the demand will increase in proportion as the public recognizes the difference between the dearness of the low-grade man at any price, and the cheapness of the high-grade man at even a very high figure.

Prevention, as every one knows, is better than cure, however brilliant the cure may be. Better keep the ignorant man out of the profession altogether than try to patch up his deficient education in a medical college, or hope that in spite of his defects he may do fairly well after all. Almost all the laws regulating the practice of medicine have in view the two ends of discouraging and preventing the uneducated man from beginning the study of medicine, and of preventing him from practicing medicine after he has obtained a diploma from a low-grade college.

A most objectionable feature of many medical colleges is that of selling to the student the same goods over and over again, two or three years in succession. In the colleges that have not adopted the graded system of instruction the courses of lectures and study are precisely the same in length and subject, so that the student in his second course knows that Prof. A. will tell a certain story next Monday at twenty minutes past eleven. Perhaps there are some students that think this proper, but it is difficult to see how any teacher can think so. There is no more reason why the course of medical instruction should not be graded, than that the academic or any technical course should not be mixed into a heterogeneous mass and thus forced into the student.

In the "Report on Medical Education, Medical Colleges, and the Regulation of the Practice of Medicine in the United States and Canada: 1765-1889," issued by the Illinois State Board of Health, is listed a total of 267 medical institutions—251 in the United States, and 16 in Canada—including three that do not confer degrees. The total number now in existence, exclusive of the three that do not confer degrees, is 131—118 in the United States and 13 in Canada. Of these there are 103 regular medical schools that teach and (practically) confer degrees, as may be seen by the large table given. Granting for a moment that we have need of so many medical colleges, do we need any more? European countries are more densely populated than America, yet look at this table:

Ratio of Medical Schools to Population.

Austria	1 : 6,032,421. ¹
Belgium	1 : 1,384,163.
Denmark	1 : 1,969,039.
France	1 : 4,513,223. ²
Germany	1 : 2,350,000.
Italy	1 : 1,353,671.
Japan	1 : 1,716,920.
Norway	1 : 1,806,500.
Mexico	1 : 1,100,890.
Netherlands	1 : 1,015,142.
Portugal	1 : 1,449,517.
Russia (in Europe)	1 : 8,750,000.
Spain	1 : 1,662,586.
Sweden	1 : 1,526,300.
Switzerland	1 : 948,700.
United Kingdom	1 : 844,444.
United States	1 : 518,846. ³

The schools of Austria, Belgium, France, Germany, and the United Kingdom are attended by a very large number of foreign students, while the number of foreign students that come to American schools is very small.

We now have about 8.4 people to the square kilo.; when there shall be in this country a population of 40 people to the sq. kilo., we will then have, with 118 medical colleges of all kinds (exclusive of preparatory schools) 1 college to 2,572,-

¹ Excluding Austro-Hungary.

² Excluding preparatory schools.

³ Excluding one preparatory school.

177 people. The average for the sixteen foreign countries enumerated is 1 college to 2,401,469 people, and certainly no one can say that this is too low. We have, then, in the United States as many colleges as are sufficient to educate medical men for 300,000,000 people, assuming that the average ratio for foreign countries represents a sufficiency. We thus have eighty-nine colleges more than we have any need for at present, and thirty more than we will need when our population is three times as great as at present!

It has been repeatedly said, by persons unfamiliar with the facts, that medical education will regulate itself. This statement is easily disproved by the fact that it has not regulated itself, and by looking at the results of medical legislation in this country, little of such legislation as we have had. Medical diplomas of 1885-1886 were presented to the Illinois State Board of Health from 60 medical schools, as compared with diplomas from 54 schools of the session of 1884-85. Graduates of 14 of the 60 schools were required to supplement their diplomas by passing examination before the Board in branches or subjects of the "Schedule of Minimum Requirements" omitted in the curricula or requirements of their respective colleges. In 1884, however, 37 schools were represented before the Illinois State Board of Health, and the graduates of 21 of these had to submit to such examinations. In 1885, 50 schools were represented, and graduates of 15 of these had to be examined. We thus see that there was a constantly diminishing percentage of conditioned graduates, and it may be asserted that this was due solely to the requirements of the State Boards.

The reports of the Boards of Medical Examiners of Virginia and North Carolina show how low is the standard of medical education in this country. In 1886 there were 63 applicants for license before the Board of Examiners of North Carolina; 17 were rejected—26.99 per cent. In 1887 there were 48 applicants; 14 were rejected—29.17 per cent. Of the 34 that passed the examinations 32 were regular graduates. Of the 14 that did not pass 8, or 59.14 per cent., were graduates. In 1888 there were 53 applicants; 17, or 32.07 per cent., failed to pass. Of the 36 that passed 35 were graduates. Of the 17 rejected 12, or 70.58 per cent., were graduates. In 1887 and 1888 there were thus 101 applicants, 87 graduates and 14 non-graduates; 22.98 per cent. of the graduates failed to pass, while 78.57 per cent. of the non-graduates failed.

Since the organization of the Medical Examining Board of Virginia, January 1, 1885,¹ there have been 223 applicants in all, 49 being rejected—21.97 per cent. Of the 223 applicants 212 were graduates; 45 were rejected—21.69 per cent. There were 11 non-graduate applicants, 4 of

whom were rejected—36.36 per cent.—and 2 had not completed their examinations at the time of the report. In the table are given the names of 27 colleges from which applicants have come before the Board; excluding the University of Heidelberg, we have 26 American colleges; 13 of these sent 51 applicants, all of whom passed; 13 others sent 156 applicants, with an average of 34.73 per cent. of each rejected—more than one-third. Of the 45 rejected graduates, 21, or 46.66 per cent. (from 8 colleges) applied for a second examination; of these 9, or 42.85 per cent., failed a second time. We thus see that the Board held 228 examinations of graduates of American colleges, and rejected 23.68 per cent., "a percentage which might be increased considerably if practical examinations were instituted in the practical branches."

The percentage of graduates to matriculates in American Colleges now averages 30.5. The average for the colleges whose students failed before the Virginia Board is 34.12—3.62 per cent. higher than the general average; for the colleges whose students passed, 28.53—1.97 per cent. lower than average. The colleges whose graduates failed, then, graduate 5.59 per cent. more of their matriculates than the colleges whose graduates passed. Colleges whose graduates failed average 2.07 courses of 22.44 weeks each; others 2.61 courses of 25.84 weeks each. Average for American courses is 24.9 weeks; average course of colleges whose candidates failed is 2.46 weeks less—of others .14 week more, or 3.46 weeks longer than the course of the other colleges.

Counting first and second applicants, we see that 228 graduates were examined, and 54 failed—23.68 per cent. From 1877 to 1887 inclusive there were 36,097 graduates from medical colleges of the United States. They held documents that are considered as entitling to practice in the majority of our States and Territories. But according to the above figures, if these 36,097 had gone before an efficient examining board, 8,300 would have been rejected! Can any one wish for better proof that the colleges, (as a class) are not regulating themselves, but need regulation, and a great deal of it?

In the Fifth Report of the Illinois State Board of Health on Medical Education it is shown that the total number of colleges that exact certain educational qualifications as a condition of matriculation is 117; the number that exacted such qualifications before the "Schedule of Minimum Requirements" went into effect in 1882-83 was 45. The number of schools that required attendance on three or more courses of lectures as a condition of graduation was 22 in 1882-83; in 1886, 41, and 47 in 1888-89. From 1882-83 to 1889 the average duration of the lecture terms in the colleges in this country increased from 23.5 to 25.3 weeks. In this time the number of

(¹ To January, 1889.)

schools that taught hygiene increased from 42 to 117; the number that taught medical jurisprudence increased from 61 to 112. The number of schools having sessions of five months or more increased from 101 to 115; and the number having sessions of six months or more increased from 42 to 66. Does this look like self-regulation of the medical colleges? The colleges, with very few exceptions, have been forced into all the improvements that they have made in their courses and teaching.

The effect of the improvement in methods of instruction and of the higher qualifications demanded before graduating the student is best seen in the *diminishing percentage of graduates to matriculates*. The tables embraced in the January, 1889, Illinois Report cover a sufficiently long period—from 1877 to 1888 inclusive—and deal with large enough numbers—130,545 matriculates and 42,633 graduates—to give them a positive value for this purpose. Notwithstanding the growth of population, the total number of medical students never reached the proportions attained in 1882-83 until 1887-88. The sessions of the 1882-83 were attended by 13,088 students; of 1883-4 by 12,763 students; of 1884-5 by 11,975 students; of 1885-6 by 12,321 students; of 1886-7 by 12,948 students; and of 1887-88 by 14,016. The effect of a higher standard of qualifications for graduation is further shown in the diminishing percentage of graduates to the total number of students. In 1882-83 out of every 1,000 matriculates 322 were graduated, taking both the United States and Canada and all schools of practice into the account. In 1886-87 only 294 out of every 1,000 matriculates were graduated, and in 1887-88, 297. In the United States alone in 1882-83 out of every 1,000 matriculates 331 were graduated, while in 1886-87 only 306 out of every 1,000 matriculates were graduated, and in 1887-88, only 303. The percentage of matriculates to graduates has therefore decreased, in the United States, from 34.6 to 30.5. In Canada the percentage has increased from 15.8 to 22.7.

In all other countries in which there is any pretense to civilization medical education is strictly regulated by law. A good preliminary education is an absolute prerequisite to the study of medicine. As a rule, too, the course of medical study is twice as long as in this country; the course of study is graded; the examinations are both theoretical and practical; and in most cases the candidate for graduation and for license to practice must have had considerable hospital experience. In this country, on the other hand, it is the rare exception for a school to require such a preliminary education as is universally required in foreign countries; it is the exception for the candidate to stand practical examinations, to have good practical instruction during his course; and it is very seldom that the graduate has had any hospital

experience. Now admitting, even for a moment, and for the sake of argument, that the brain of the American youth is a vastly superior article to that of any foreign-born youth, it may be asked if its superiority is so great as to make up for the American defects in medical education? They that have had experience with American and foreign brains will not hesitate to answer in the negative. And judging from the American and foreign medical literature, the conclusion must be that the foreign brains are the better article as a rule, or that the native brains are handicapped by educational defects.

Anyone that examines the preliminary requirements for matriculation and for graduation of, say, Canadian medical colleges and those of this country must be struck with the great advance of the former over the latter. When an intelligent person compares the standard of medical education in foreign countries with the standard of the large majority of the colleges in the United States, he is compelled to blush for his country. And not only are the foreign standards higher, but in reality more branches pertaining to medicine are taught in foreign colleges.

As may be seen from the tabulated statement of the colleges, our students have far too insufficient instruction in practical subjects. One can no more be fitted to practice medicine by listening to lectures than he can learn mineralogy by looking at magic-lantern views of the cañons of Colorado. Before a student is graduated in medicine he should be taught to take histories of cases, to make a thorough examination of patients, to make a diagnosis in actual cases, to mark out the treatment, and to perform operations.

It is an idle dream to suppose that one can learn theoretical and practical medicine in two or even three years. Besides the commonsense view of it, if medicine could be learned in this time, it is probable that the governments of foreign countries would have found it out several years ago, and would have adopted our short courses. There should be a fourth year, devoted entirely to practical work, and a fifth year would be all the better.

With few exceptions the examinations in this country are conducted in such a manner as to offer every advantage to students with retentive memories, the "crammers," but none to the hard-working student that really knows what he has studied, but with a memory not so retentive. The average graduate in medicine from an American college has book medicine—"canned science" pretty well in his head, but the number that know medicine practically—so far as they have gone—I believe to be very limited. It is not pertinent to say that the young graduate will learn more in time; of course he will, and must. But he should not acquire all his knowledge of *practical* medicine after he begins practice.

THE JOURNAL MEDICAL COLLEGE AN.

Number.	NAME AND LOCATION OF COLLEGE.		Organized.	Weeks in Regular Term.	Terms in Full Course.	Matriculation Requirements.		GRADUA-		
						Age.	Educational.	Years of Study.	No. regular Courses.	Dissection Courses.
1	Alabama	Medical College of Alabama, Mobile.	1859	20	3	18	C. S. c.	3	3	2
2	Arkansas	Medical Department Arkansas Industrial University, Little Rock.	1879	20	3	18	T. c.	3	3	2
3	California	Cooper Medical College, San Francisco.	1859	20	3	18	H. S. d.	3	3	2
4	"	Medical Department University of California, San Francisco.	1863	22	3	18	H. S. d.	3	3	2
5	"	College of Medicine Univ. of Southern California, Los Angeles.	1883	24	3	18	H. S. d.	3	3	2
6	Canada	University of Toronto, Toronto.	1843	24	4	16	U. d.	4	4	2
7	"	Trinity Medical College, Toronto.	1850	27	3	17	T. c.	4	4	2
8	"	Royal College Physicians and Surgeons, Kingston.	1854	25	4	17	H. S. d.	4	4	2
9	"	Medical Department Western University, London.	1882	20	4	17	C. S. c.	4	4	2
10	"	Woman's Medical College, Toronto.	1883	24	4	17	H. S. d.	4	4	2
11	"	Kingston.	1883	27	4	17	H. S. d.	4	4	2
12	"	McGill University, Montreal.	1824	26	4	18	C. d.	4	4	2
13	"	École de Médecine et de Chirurgie, Montreal.	1843	6 mos	4	18	Ex.	4	4	2
14	"	Laval University, Montreal.	1852	36	4	18	Ex.	4	4	2
15	"	University Bishop's College, Montreal.	1870	24	4	16	T. L.	4	4	2
16	Nova Scotia	Halifax Medical College, Halifax.	1867	23	4	16	H. S. d.	3	3	2
17	Manitoba	Manitoba Medical College, Winnipeg.	1883	28	4	18	H. S. d.	3	3	2
18	Colorado	University of Denver, Denver.	1881	26	2	18	C. S. c.	3	3	2
19	"	University of Colorado, Boulder.	1883	33	2	18	H. S. d.	3	3	2
20	"	Gross Medical College, Denver.	1887	23	2	18	H. S. d.	3	3	2
21	Connecticut	Gale University, New Haven.	1812	34	3	18	H. S. d.	3	3	2
22	Dist. of Columbia	National Medical College, Washington.	1821	20	3	18	H. S. d.	3	3	2
23	"	University of Georgetown, Georgetown.	1850	30	3	18	H. S. d.	3	3	2
24	"	Howard University, Washington.	1867	20	3	18	C. S. c.	3	3	2
25	"	Medical Department National University, Washington.	1884	31	3	18	H. S. d.	3	3	2
26	Georgia	Medical College of Georgia, Augusta.	1829	20	2	20	None.	2	2	1
27	"	Atlanta Medical College, Atlanta.	1854	20	2	20	None.	2	2	1
28	"	Southern Medical College, Atlanta.	1879	20	2	20	None.	2	2	1
29	Illinois	Rush Medical College, Chicago.	1812	30	3	18	C. S. c.	3	3	2
30	"	Chicago Medical College, Chicago.	1859	30	3	18	C. S. c.	3	3	2
31	"	Woman's Medical College of Chicago.	1870	20	2	19	T. c.	3	3	2
32	"	College of Physicians and Surgeons of Chicago.	1882	20	3	17	C. S. c.	4	3	2
33	"	Chaddock School of Medicine, Quincy.	1882	20	3	17	C. S. c.	4	3	2
34	Indiana	Medical College of Indiana, Indianapolis.	1878	22	2	19	None.	3	3	2
35	"	Central College of Physicians and Surgeons, Indianapolis.	1879	22	2	19	None.	3	3	2
36	"	Fort Wayne College of Medicine, Fort Wayne.	1879	22	2	19	None.	3	3	2
37	Iowa	College of Physicians and Surgeons, Keokuk.	1850	20	2	19	C. S. c.	3	3	2
38	"	Medical Department State University of Iowa, Iowa City.	1870	20	2	19	C. S. c.	3	3	2
39	"	Iowa College of Physicians and Surgeons, Des Moines.	1882	21	3	18	C. S. c.	4	3	2
40	Kentucky	University of Louisville, Medical Department, Louisville.	1837	20	2	19	T. c.	3	3	2
41	"	Kentucky School of Medicine, Louisville.	1850	20	2	19	T. c.	3	3	2
42	"	Louisville Medical College, Louisville.	1869	24	2	19	C. S. c.	3	3	2
43	"	Hospital College of Medicine, Louisville.	1873	20	2	19	C. S. c.	3	3	2
44	Louisiana	Medical Department Tulane University, New Orleans.	1834	23	2	18	H. S. d.	3	3	2
45	Maine	Medical School of Maine, Brunswick.	1820	20	2	18	H. S. d.	3	3	2
46	Maryland	University of Maryland, School of Medicine, Baltimore.	1807	20	2	18	None.	3	3	2
47	"	College of Physicians and Surgeons, Baltimore.	1872	24	2	19	None.	3	3	2
48	"	Baltimore Medical College, Baltimore.	1881	26	2	19	C. S. c.	3	3	2
49	"	Woman's Medical College of Baltimore.	1882	28	3	18	C. S. c.	3	3	2
50	"	Baltimore University, School of Medicine, Baltimore.	1884	20	2	18	C. S. c.	3	3	2
51	Massachusetts	Harvard University Medical School, Boston.	1782	40	3	18	C. S. d.	3	3	2
52	"	College of Physicians and Surgeons, Boston.	1850	24	3	18	H. S. d.	3	3	2
53	Michigan	Department of Med. and Surgery, Univ. of Michigan, Ann Arbor.	1850	36	3	18	H. S. d.	3	3	2
54	"	Detroit College of Medicine, Detroit.	1885	26	2	18	C. S. c.	3	3	2
55	"	Michigan College of Medicine and Surgery, Detroit.	1888	26	2	18	C. S. c.	3	3	2
56	Minnesota	Minneapolis College of Physicians and Surgeons, Minneapolis.	1883	26	3	18	T. c.	3	3	2
57	"	College of Medicine and Surgery, Minneapolis.	1883	26	3	18	C. S. c.	3	3	2
58	Missouri	Missouri Medical College, St. Louis.	1840	34	3	17	H. S. d.	3	3	2
59	"	St. Louis Medical College, St. Louis.	1841	34	3	17	H. S. d.	3	3	2
60	"	Kansas City Medical College, Kansas City.	1869	23	2	18	H. S. d.	3	3	2
61	"	St. Louis College, Physicians and Surgeons, St. Louis.	1869	24	2	18	H. S. d.	3	3	2
62	"	Northwestern Medical College, St. Joseph.	1880	22	2	19	H. S. d.	3	3	2
63	"	University of Kansas City, Medical Department, Kansas City.	1881	26	2	17	C. S. c.	3	3	2
64	"	Ensworth Medical College, St. Joseph.	1882	24	2	18	C. S. c.	3	3	2
65	"	Beaumont Hospital Medical College, St. Louis.	1886	24	2	18	T. c.	3	3	2
66	Nebraska	Omaha Medical College, Omaha.	1881	25	2	18	H. S. d.	3	3	2
67	New Hampshire	Dartmouth Medical College, Hanover.	1797	20	2	18	C. S. s.	3	3	1
68	New York	College of Physicians and Surgeons, New York.	1807	37	3	18	T. c.	3	3	1
69	"	Albany Medical College, Albany.	1838	25	3	18	C. S. c.	3	3	2
70	"	University City of New York, Medical Department, New York.	1841	24	2	18	C. S. c.	3	3	2
71	"	Medical Department University of Buffalo, Buffalo.	1846	24	2	18	None.	3	3	2
72	"	Long Island College Hospital, Brooklyn.	1858	24	2	18	H. S. d.	3	3	2
73	"	Bellevue Hospital Medical College, New York.	1861	32	2	18	C. S. c.	3	3	2
74	"	Woman's Medical College of the N. Y. Infirmary, New York.	1868	19	2	18	C. S. c.	3	3	2
75	"	College of Medicine of Syracuse University, Syracuse.	1872	28	3	18	H. S. c.	3	3	2
76	"	Medical Department of Niagara University, Buffalo.	1883	28	3	18	C. S. c.	3	3	2
77	North Carolina	Leonard Medical School, Raleigh.	1882	22	2	18	C. S. c.	3	3	2
78	Ohio	Medical College of Ohio, Cincinnati.	1819	22	2	18	T. c.	3	3	2
79	"	Western Reserve University, Medical Department, Cleveland.	1843	24	3	18	C. S. c.	3	3	2
80	"	Starling Medical College, Columbus.	1847	24	2	18	C. S. c.	3	3	2
81	"	Cincinnati College of Medicine and Surgery, Cincinnati.	1849	22	2	18	C. S. c.	3	3	2
82	"	Miami Medical College, Cincinnati.	1852	24	2	18	None.	3	3	2
83	"	Medical Department University of Wooster, Cleveland.	1863	26	2	18	C. S. c.	3	3	2
84	"	Columbus Medical College, Columbus.	1875	24	3	18	C. S. d.	3	3	2
85	"	Toledo Medical College, Toledo.	1883	24	2	18	C. S. c.	3	3	2
86	"	Northwestern Ohio Medical College, Toledo.	1887	20	2	19	C. S. c.	3	3	2
87	"	Woman's Medical College of Cincinnati, Cincinnati.	1864	26	3	19	C. S. c.	3	3	2
88	Oregon	Medical Department Willamette University, Portland.	1864	20	3	19	C. S. c.	3	3	2

NOUNCEMENT FOR 1889-90

REQUIREMENTS.						OBLIGATORY PRACTICAL AND LABORATORY COURSES.													No. Instructors.	Women Admitted?	Practical Examinations.	Number.
Dissection Re- quired.	Hospital Work Required.	Clinical Work Required.	Hygiene Taught?	Medical Jurisprudence?	Graded Course.	No. beds at com- mand for Clin- ical Instruction.	Surgery.	Obstetrics.	Gynecol- ogy.	Chemis- try.	Pharma- cy.	Physiol- ogy.	Histology.	Pathol- ogy.	Bacteriol- ogy.	Physical Diagnosis.	Post mort. Exam'n.					
Whole body	Yes	Yes	Yes	yes	no	50	yes	yes	yes	no	no	no	no	no	no	yes	yes	14	no	yes	1	
Whole body	Yes	Yes	Yes	yes	yes	262	yes	yes	yes	yes	no	no	yes	yes	yes	yes	yes	16	yes	yes	2	
Whole body				Yes	yes	250	yes	yes	yes	yes	no	no	yes	yes	yes	yes	no	18	no	yes	3	
Whole body	Yes	Yes	Yes	yes	yes	300	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	20	yes	yes	4
Whole body	24 mos.	12 mos.	Yes	Yes	yes	350	no	yes	no	yes	no	no	yes	yes	yes	yes	no	yes	20	yes	yes	5
Whole body	18 mos.	2 years.	Yes	Yes	yes	275	yes	yes	yes	yes	no	no	no	yes	yes	yes	yes	yes	14	no	yes	6
Whole body twice.	24 mos.	26 mos.	Yes	Yes	yes	100	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	14	no	yes	7
One subject	3 years.		Yes	Yes	yes	100	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	17	no	yes	8
Six parts	24 mos.	24 mos.	Yes	Yes	yes	375	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	19	yes	yes	9
Whole body	24 mos.	24 mos.	Yes	Yes	yes	250	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	13	yes	yes	10
Indefinite	18 mos.	Yes	Yes	Yes	yes	175	no	yes	yes	yes	yes	yes	yes	no	no	yes	yes	23	no	no	11	
Six parts	18 mos.	Yes	Yes	Yes	yes	250	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	15	yes	yes	12	
Four subjects	Yes	Yes	Yes	Yes	yes	100	yes	yes	yes	yes	no	no	yes	yes	yes	yes	yes	17	no	yes	13	
Six extremities.	Yes	Yes	Yes	Yes	yes	200	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	16	no	yes	14	
Body, twice	Yes	Yes	Yes	Yes	no	120	no	yes	no	yes	no	no	no	no	no	yes	yes	16	yes	yes	15	
Body twice					yes	100												14			16	
Whole subject.	No	Yes	Yes	yes	no	300	no	no	no	no	no	no	no	no	no	yes	no	20	yes	yes	17	
Whole subject.	Yes	No	Yes	yes	no	24	yes	no	no	yes	no	no	yes	yes	yes	yes	yes	12	yes	yes	18	
Three parts.	Yes	Yes	Yes	yes	yes	125	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	16	yes	yes	19	
Four parts.	Yes	Yes	Yes	yes	yes	250	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	19	no	no	20	
Three parts.	No	No	Yes	yes	yes	300	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	23	no	no	21	
Three parts.	Yes	Yes	No	Yes	yes	350	yes	yes	yes	yes	yes	no	no	no	no	yes	yes	8	yes	yes	22	
Whole subject.	No	Yes	Yes	yes	yes	?	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	18	yes	yes	23	
Indefinite	No	No	No	yes	no	55	no	no	no	no	no	no	no	no	no	no	no	9	no	no	24	
Whole subject.	No	Yes	Yes	no	no	10	yes	yes	yes	no	no	no	no	no	no	no	no	12	no	no	25	
Six parts.	Yes	No	Yes	yes	no	30	yes	yes	yes	yes	no	no	yes	yes	no	yes	no	14	no	no	26	
Half subject.	Yes	Yes	Yes	yes	yes	250	yes	yes	yes	yes	no	no	yes	yes	no	yes	no	26	no	no	27	
	No	No	Yes	yes	no	none	no	no	no	yes	no	no	no	no	no	no	no	12	yes	no	28	
Three parts	Yes	No	Yes	yes	no	?	yes	no	yes	yes	yes	no	yes	no	no	yes	no	15	yes	no	29	
One subject	?	No	Yes	yes	no		yes	no	no	no	no	no	no	no	no	yes	yes	11	yes	no	30	
	No	Yes?	Yes	yes	yes	25	yes	no	yes	yes	yes	yes	yes	yes	no	yes	no	15	yes	yes	31	
Whole body.	No	No	Yes	yes	no	400	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no	18	no	no	32	
Whole body.	Yes	Yes	Yes	yes	no	250	yes	no	no	yes	yes	no	no	no	no	yes	no	15	no	no	33	
Two subjects.	No	Yes	Yes	yes	no	350	yes	no	no	no	yes	yes	yes	yes	yes	yes	yes	15	no	no	34	
Two parts.	Yes	Yes	Yes	yes	no	80-100	no	no	no	yes	no	no	no	no	no	no	no	23	no	?	35	
Indefinite	None	No	Yes	yes	no	none	no	yes	no	yes	yes	yes	yes	no	yes	no	no	8	no	no	36	
One subject.	Yes	Yes	Yes	yes	no	75	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	17	no	no	37	
One subject.	No	Yes	Yes	yes	yes	20	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	22	no	yes	38	
Three parts.	No	No	Yes	yes	yes		yes	yes	no	yes	no	no	no	no	no	no	no	40	no		39	
One part.	No	No	Yes	yes	no	none	no	no	no	yes	no	no	no	no	no	no	no	11	yes	yes	40	
Whole body	1 year.	1 year	Yes	yes	yes	800	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	21	yes	yes	41	
Whole body	Yes	Yes	Yes	yes	no	235	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	36	no		42	
Two parts.	Yes	Yes	Yes	yes	no	80	yes	yes	yes	yes	yes	no	yes	yes	no	yes	no	12	yes	no	43	
Whole subject.	Yes	Yes	Yes	yes	yes	40	yes	yes	yes	yes	yes	no	no	no	no	yes	yes	23	yes	yes	44	
Three parts	Yes	Yes	Yes	yes	yes		yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	30	yes	no	45	
Two subjects	No	No	Yes	yes	yes	1000	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	32	no	no	46	
Whole body.	No	Yes	Yes	yes	no	100	no	yes	no	yes	no	no	yes	yes	no	yes	no	21	no	yes	47	
All parts	Yes	Yes	Yes	yes	no	75	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	15	no	yes	48	
All parts	No	Yes	Yes	yes	no	none	yes	yes	yes	yes	no	no	yes	yes	yes	yes	yes	12	no	yes	49	
All parts	No	No	Yes	yes	no	200	yes	no	no	no	no	no	yes	no	no	yes	yes	16	no	yes	50	
Indefinite	Yes	Yes	Yes	yes	yes	500	yes	no	yes	yes	no	yes	yes	yes	yes	yes	yes	15	yes	yes	51	
All parts	Yes	Yes	Yes	yes	no	100	yes	yes	yes	yes	no	no	no	no	no	yes	yes	19	no	no	52	
All parts	No	No	Yes	yes	no	none	no	no	no	yes	no	no	no	no	no	no	no	17	no	no	53	
Half subject.	Yes	Yes	Yes	yes	yes	150	yes	yes	yes	yes	no	no	yes	yes	yes	yes	yes	22	no	no	54	
All parts	Yes	Yes	Yes	yes	no	100	no	no	no	yes	no	no	no	no	no	no	no	30	yes	no	55	
Six parts.	Yes	Yes	Yes	yes	no		yes	yes	yes	yes	yes	no	no	yes	yes	yes	yes	50	no	yes	56	
Whole subject.	No	No	Yes	no	yes	40	no	yes	yes	yes	no	yes	yes	yes	no	yes	no	28	yes	yes	57	
Half subject twice.	Yes	Yes	Yes	yes	yes	195	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	24	yes	yes	58	
Three parts	No	No	Yes	yes	no	650												17	no	no	59	
All parts	Yes	Yes	Yes	yes	yes	175	no	yes	no	yes	no	yes	yes	yes	no	yes	no	22	no	no	60	
Two parts	No	No	Yes	yes	no	150	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	16	no	yes	61	
One subject.	Yes	No	Yes	no	no	450	no	no	no	yes	no	no	no	no	no	no	no	18	no	no	62	
All parts	Yes	Yes	Yes	yes	yes	350	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	18	no	no	63	
Whole body	Yes	Yes	Yes	yes	yes	50	yes	yes	yes	yes	no	yes	yes	yes	yes	no	yes	16	yes	yes	64	
Whole body	Yes	?	Yes	yes	no	250	no	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	17	no	no	65	
Whole subject.	No	No	Yes	no	no	100	no	no	no	yes	yes	yes	yes	yes	no	yes	no	16	yes	yes	66	
	No	No	Yes	yes	no		no	no	no	yes	yes	yes	yes	yes	yes	no	yes	14	yes	no	67	

THE JOURNAL MEDICAL COLLEGE AN-

Number.	NAME AND LOCATION OF COLLEGE.	Organized.	Weeks in Regular Term.	Terms in Full Course.	Matriculation Requirements.		GRADUA-		
					Age.	Educational.	Years of Study.	No. regular Courses.	Dissection Courses.
89	Oregon University of State of Oregon, Medical Department	1887	25	2	...	H. S. d.	3	2	1
90	Pennsylvania University of Pennsylvania, Departm't of Medicine, Philadelphia.	1765	30	3	...	T. c.	3	2	2
91	" Jefferson Medical College, Philadelphia.	1826	28	3	...	H. S. d.	3	3	2
92	" Woman's Medical College of Pennsylvania, Philadelphia	1850	32	3	...	C. S. c.	3	3	2
93	" Medico-Chirurgical College of Philadelphia, Philadelphia	1881	26	3	18	T. c.	3	2	2
94	" Western Pennsylvania Medical College, Pittsburgh.	1886	26	2	...	C. S. c.	3	2	2
95	South Carolina Medical College of State of South Carolina, Charleston.	1832	25	2	19	T. c.	3	2	2
96	Tennessee. Med. Departm'ts Univ. Nashville and Vanderbilt Univ., Nashville.	1850	22	2	...	C. S. c.	3	2	1
97	" Medical Department University of Tennessee, Nashville.	1876	24	2	...	N. S. d.	3	3	2
98	" Meharry Medical Department, Central Tenn. College, Nashville.	1876	20	3	18	None.	2	1	2
99	" Memphis Hospital Medical College, Memphis.	1880	20	2	...	C. S. c.	3	3	2
100	Texas Texas Medical College and Hospital, Galveston.	1864	24	...	...	C. S. c.	3	2	2
101	Vermont Medical Department of University of Vermont, Burlington	1823	20	2	...	C. S. c.	3	2	...
102	Virginia University of Virginia, Charlottesville.	1825	...	...	...	?	1	2	...
103	" Medical College of Virginia, Richmond.	1838	25	3	18	?	1	2	...

EXPLANATION OF TABLE.

Terms in full course means the least number of terms that a candidate for graduation may take.

Educational Requirements for Matriculation.—T. c. means teacher's certificate; C. S. c., common school certificate; H. S. d., high school diploma; U. d., university diploma; N. S. d., normal school diploma. In each case the lowest substitute for an examination was given.

In regard to the Obligatory and Laboratory Courses, the following was sent to the colleges by way of explanation:

Hospital work required.—By this is meant: Is each student required to examine and prescribe for patients, under the direction of a teacher, in a hospital?

Clinical work required.—We do not refer to clinical lectures, but to actual clinical work done by the student.

Is your course graded, i. e., is a graded course compulsory?

Practical Surgery.—Is each student required to take a practical course (lectures are not meant) in operative surgery, and bandaging, and minor surgery?

Practical Obstetrics.—Is each student required to practice on the mannikin, or living subject, or both, in obstetrical diagnosis and treatment?

Practical Gynecology.—Is each student required to examine gynecological cases, and to prescribe or treat them, under direction of a teacher?

Physical Diagnosis.—Is each student required to practice this on the living subject, under the direction of a teacher, or is he simply told how to do it?

Post Mortem Examinations.—Is each student required to make one or more autopsies?

Practical Examinations.—In the final examination on Practice of Medicine, for example, is the candidate required to diagnose the disease of a living subject, in the presence of one or more teachers and the patient, discuss the case, and indicate treatment? Same as regards surgical examination. In the final anatomy examination is the student required to demonstrate any part of the body?

NOTES IN REGARD TO INDIVIDUAL COLLEGES.—(The numbers correspond to table numbers.)

2. Course graded, but not compulsory.

3. Regular session is in summer, with an intermediate, or winter, term of 16 weeks, i. e., "76 weeks in our entire course." Course not entirely graded; some chairs are. Large out-door clinic in addition to hospital beds. Examinations clinical and practical in surgery and medicine. Hygiene and medical jurisprudence not taught as special chairs.

5. Lectures on Bacteriology—no work.

6. Practical surgery and physical diagnosis courses are optional. Women admitted to practical courses in biology and chemistry.

7. Three years' course for holders of Arts Degree, and rarely when a previous year has been spent with a registered practitioner. Bacteriology taught with pathology.

8. "As many of the examinations as possible are practical."

10. Examinations yearly. "Each student is required to make from three to twelve autopsies."

11. Each candidate for graduation must attend six cases of midwifery. Practical examinations held in hospital, by Queen's Univ., which is independent of the College.

13. "Clinical questioning daily." "Post mortem examinations performed as often as possible." "The matriculation before board means before the College of Physicians and Surgeons of the Province, or otherwise before Committee of School if no certificate of Classical Course is produced. Practical surgery is taught at the Hospital and Dispensaries, of which we have several in connection with the Hôtel Dieu. There is also gynecological work for advanced students at our hospital, and a dispensary has recently been founded for that also. The other branches, as pathology, bacteriology, etc., all included under the title of histology, with us, and we purpose next year giving special work in that direc-

tion. We have clinical bedside examinations in hospital for the final examination, besides written and oral."

18. Clinical work required: "enough to pass clinical examination." Course not graded, but "most students take three years and graded course."

19. Hospital work: "not absolutely required, but is always carried out as far as possible." Graded course "not yet made compulsory." "Physical diagnosis required next year, but not heretofore."

20. Course will be graded "in near future." Chairs of "histology, laboratory pathology and bacteriology not yet filled."

21. The Dean writes: "I hope you will succeed in getting out a full statement of the statistics of our schools. I regret that an apparent injustice has to be done our course for the M.D. in stating that two 'winter courses' only are required. Our course is strictly graded on the same plan as is in vogue in the College and Sheffield Scientific School, so that it is the natural and expected thing that students expecting to study here should plan to spend three years here, and since the adoption of this course ten years ago, but few have done otherwise, although the old rule continues in force."

22. In regard to the obligatory and practical courses the Dean writes: "With a large majority of our students these replies might have been 'yes' instead of 'no.' But the question as to 'each student being required,' etc., can be truthfully answered only in the negative." Upon this "yes" has been given as the answer.

25. Post-mortem examinations are required "as far as possible." Frequent course examinations, which are taken into account when candidate comes up for degree. The final examination in obstetrics is practical (on mannikin).

30. Hospital work in "ambulatory clinics." Final examinations "chiefly questions; also clinical and practical in practical branches."

33. No beds at command, "but the students are favored by one hospital and nine practicing physicians in the city."

35. Advises three years' course. "After session of 1890-91 we will require four years' study of medicine and the attendance of three courses of lectures—graded."

42. "Practical obstetrics on mannikin." Practical gynecology optional.

43. Practical obstetrics on mannikin. "Every member of the class has every opportunity afforded him for examining gynecological cases."

"but not completely" graded.

44. Some students take a three years' graded course.

47. "No student allowed to come up on any subject except having attended to full courses of lectures."

56. Bacteriology taught with pathology. Post-mortem examinations when (subjects) can be procured.

58. "Inasmuch as we propose to revise and reorganize our system and to inaugurate the three courses of lectures, we are not prepared to answer the questions with certainty, since several questions are not yet definitely determined by our Faculty. P. GERVAIS ROBINSON, M.D., Dean Mo. Med. Col."

59. "Actual clinical work will be soon made part of the course, and obligatory." Preparing for practical examinations at the coming winter session.

60. Students that desire can take graded course. "Heretofore the examinations have been written; but hereafter students will be examined at the bedside in clinical medicine and clinical surgery."

61. Graded course optional.

63. Two years' course not graded; three years' course graded. Facilities for hospital

64. Three years' graded course optional. Facilities for hospital and clinical work, but no requirements. "The Professor of Obstetrics furnishes the students with confinement cases, which the students attend at the patients' houses. Students required to attend and witness autopsies. In the matter of gynecology advanced students are given opportunities to assist in the operations, and make all necessary examinations."

67. Students have obstetrical cases assigned them in hospital. Students examine gynecological cases brought before class.

68. Course graded "to a certain degree."

NOUNCEMENT FOR 1889-90—CONTINUED.

NOUNCMENT FOR 1899																							
TION REQUIREMENTS.							OBLIGATORY PRACTICAL AND LABORATORY COURSES.													No. Instructors.	Women Admitted?	Practical Examinations.	Number.
Dissection Re-quired.	Hospital Work Re-quired.	Clinical Work Re-quired.	Hygiene Taught?	Medical Jurisprudence?	Graded Course.	No. beds at com-mand for Clin-ical Instruction.	Surgery.	Obstetrics.	Gynecol-ogy.	Chemis-try.	Pharma-cy.	Physiolo-gy.	Histology.	Pathol-ogy.	Bacteriol-ogy.	Physical Diagnosis.	Post mort. Exam't'n.						
Three parts	No	no	Yes	yes	no	350	yes	yes	yes	no	no	no	no	no	no	yes	no	15	yes	no	89		
Six parts	Yes	Yes	Yes	yes	no	1100	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	69	no	yes	90		
Half subject	No	No	Yes	yes	no	150	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	40	no	no	91		
Whole body	Yes	Yes	Yes	yes	yes	50	yes	yes	yes	yes	yes	no	no	yes	yes	no	yes	29	yes	no	92		
Six parts	Yes	No	Yes	yes	yes	200	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	110	38	?	yes	93	
Body twice	Yes	Yes	Yes	yes	yes	175	no	no	no	yes	yes	no	no	no	no	no	yes	41	no	yes	94		
Six parts	No	No	Yes	yes	no	75	no	no	no	no	no	no	no	no	no	no	no	13	no	no	95		
Two subjects	No	No	Yes	yes	no	160	yes	yes	no	yes	no	yes	no	yes	no	yes	no	15	no	no	96		
	Yes	Yes	Yes	yes	yes	180	no	no	no	yes	no	no	yes	no	no	yes	no	14	no	no	97		
	No	Yes	Yes	yes	no	150	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	9	yes	no	98		
	Yes	Yes	Yes	yes	yes	20	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	11	no	no	99		
Whole body	No	No	Yes	yes	no		yes	no	no	yes	no	yes	yes	no	no	yes	yes	10	yes	no	100		
																		17	no	yes	101		
																					102		
All parts	None	None	Yes	no	yes	none												19	no	no	103		

69. Practical examinations during course, not as part of final examinations, and are taken into consideration at final examinations.

71. Three courses recommended. Course not graded, but final examinations are held in primary branches at end of second year for third year students.

72. Optional graded course.

74. Students required to examine patients, but not to prescribe for them, in dispensary. Each candidate for graduation must attend ten obstetrical cases.

75. Practical obstetrics on mannikin.

79. Practical surgery course in "bandaging." "Senior and middle classes required to attend all hospital clinics, and receive specific instruction in various dispensary departments." "No student allowed to graduate who has not attended a case of labor at the maternity." "Our senior class is divided up into classes of three or four, in this manner they obtain practical instruction in all the dispensary departments under instruction of professor or assistants. The service is changed every month. Each student has actual practice in the various departments." "Whilst it is true courses in practical surgery and gynecology are not required by us, yet our seniors do considerable minor surgery and gynecology when acting assistants in the dispensary."

81. Two years' course not graded; three years' course graded.

82. Three years' graded course after next year. No clinical work last one month each in sur-

in on all clinical cases assigned them during their last term; when a student attends any case he is examined and marked from day to day."

85. Course not graded, "though most of our students attend is throughout course. not at final.

86. Laboratories, and taken into account. "This year 63 per cent of our matriculates take a graded three years' course, and in 1890 all will be required to do so." "Students assist at post-mortem examinations—about ten each winter."

92. Spring course of ten weeks compulsory, making thirty-two weeks.

93. Admission of women under consideration.

95. Graded course not yet obligatory.

97. Therapeutics.

98. Therapeutics.

99. Therapeutics.

100. Therapeutics.

101. Therapeutics.

102. Therapeutics.

103. Therapeutics.

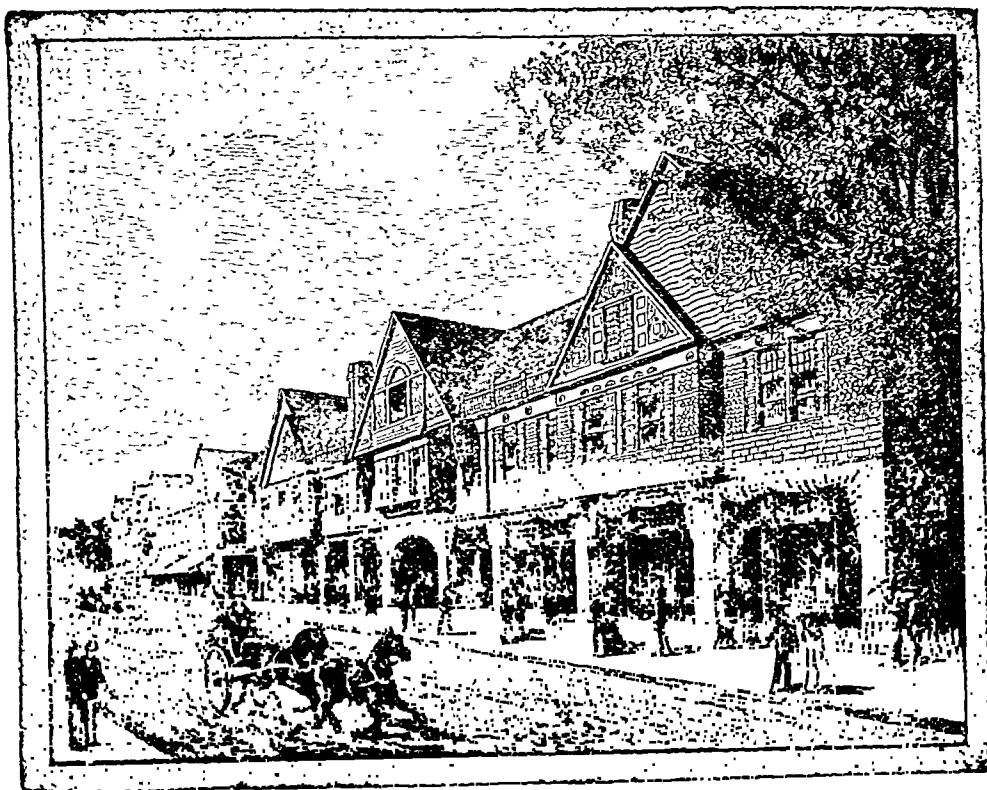
mained 42 colleges to be heard from, and to these a third set of circulars and slips was sent. On April 26 there remained 26 colleges to be heard from, and still another set was sent to these. Meanwhile, of the replies that had been received many were unsatisfactory for various reasons, and circulars, slips, and letters were sent in order to have as complete and satisfactory information as possible. In this way more than 500 letters, circulars, etc., have been sent out to the 103 colleges.

The repeated requests for further information caused no little dissatisfaction among the deans and secretaries of the colleges. Yet a careful reading of the replies to the different questions, of college catalogues, and of the Fifth Report of the Illinois State Board of Health on "Medical Education" showed that some of the replies were inaccurate. For example, some of the colleges that claimed to have practical and clinical examinations had no compulsory hospital or clinical work, and no practical courses—not even a compulsory physical diagnosis course! In several instances the same question was answered "Yes" on the circular and "No" on the explanatory slip. In a large number of cases a "Yes" was changed to "No" when the explanatory slip was sent. The time has been too short to make as thorough an investigation as was desired.

It will be seen that some of the colleges have not been heard from at all. It will be noticed also in the table, that there are blanks in the returns from some of the colleges. This shows that no attention has been paid to requests for further information, and as the first information was unsatisfactory it has not been given in the table.

It will be noticed that some of the two-course colleges claim to require hospital and clinical work, practical surgery, obstetrics and gynecology, physical diagnosis, post-mortem examinations, various laboratory courses, and practical examinations. How a student can do all these things in two courses of not more than 50 weeks all told is a mystery that remains to be solved.

In the preparation of the foregoing tables very great difficulties have been encountered. Circulars with questions to be answered were sent to all the colleges on March 9. But few of these had been returned before it was evident that some of the questions had been misunderstood. An explanatory slip was then printed and sent out, the circulars being returned for correction. On March 29, a second set of circulars and explanatory slips was sent to the 51 colleges that had not been heard from. By April 15 there still re-



THE CASINO.

Where the Sessions of the Association will be held.

American Medical Association.

LIST OF OFFICERS AND PROGRAMME OF THE FORTIETH ANNUAL MEETING.

TO BE HELD AT NEWPORT, R. I., JUNE 25, 26, 27 AND 28, 1889.

GENERAL OFFICERS:

President—W. W. DAWSON, M.D., Cincinnati, Ohio.

Vice-Presidents—W. L. SCHENK, M.D., of Kansas; FRANK WOODBURY, M.D., of Pennsylvania;
H. O. WALKER, M.D., of Michigan; J. W. BAILEY, M.D., of Georgia.

Treasurer—RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Pa.

Permanent Secretary—WM. B. ATKINSON, M.D., 1400 Pine Street, Philadelphia, Pa.

Local Secretary—VALENTINE MATT FRANCIS, M.D., New York.

Librarian—C. H. A. KLEINSCHMIDT, M.D., Washington, D. C.

Chairman Committee of Arrangements—H. R. STORER, M.D., Newport.

The General Sessions will be held at the Music Hall, Bellevue Avenue, adjoining the Ocean House, and those of the Sections at the Newport Casino, also immediately contiguous, which for the first time in its history, and as an act of courtesy, is permitted by its Governors to be occupied for other than the purpose for which it was built.

PROGRAMME OF GENERAL SESSIONS.

FIRST DAY, TUESDAY, JUNE 25.

Assemble in Music Hall, Bellevue Avenue, at 11 A.M.

Meeting called to order by Dr. Horatio R. Storer, Chairman Committee of Arrangements.

Prayer. Rev. Thatcher Thayer, D.D. (Cong.), the senior clergyman of Newport.

Reading names of delegates and others thus far registered, by permanent Secretary, Dr. Wm. Atkinson, of Philadelphia.

Announcement of the programme for the day, of halls for the Sections, that papers not already listed be handed to Chairman of Committee of Arrangements for reference to appropriate Sections, that Judicial Council meet at 2 P.M. at Newport Casino, and that, to prevent the usual haste and confusion, the delegates from the different States hold their separate meetings, to elect members of the Nominating Committee, at 9:30 A.M. Wednesday, at the Music Hall, half an hour before the general session.

Address of Welcome by Hon. Thomas Coggeshall, Mayor of Newport; by Dr. Henry E. Turner, of Newport, President of State Board of Health, on behalf of the profession of Newport; and Hon. James H. Eldredge, M.D., of East Greenwich, ex-President of Rhode Island Medical Society, on behalf of the profession of Rhode Island.

Presidential Address, Dr. W. W. Dawson, of Cincinnati, Professor of Surgery in the Medical College of Ohio.

SECOND DAY, WEDNESDAY, JUNE 26.

Meeting called to order by the President of the Association at 10 A.M.

Prayer.

Reading continuation of registry list, of programmes for the day, and call for reports of elections to Nominating Committee.

Address on Medicine, by Dr. Wm. Pepper, of

Philadelphia, Provost of the University of Pennsylvania.

Report of the Trustees of THE JOURNAL.

Consideration of proposed Amendments to the Constitution.

Announcement of Nominating Committee, and that it will report at close of Thursday's general session.

THIRD DAY, THURSDAY, JUNE 27.

Meeting called to order by the President at 10 A.M.

Prayer.

Reading of continuation of registry list, and of programmes for the day, and notice that all new business must be introduced at to-day's session.

Address on Surgery, by Dr. Phineas S. Conner, of Cincinnati.

Introduction of New Business.

Report of Treasurer.

Report of Librarian.

Report of Rush Monument Committee.

Report of Nominating Committee.

FOURTH DAY, FRIDAY, JUNE 28.

Meeting called to order by the President at 9 A.M.

Prayer.

Reading of continuation of Registry list, and of programmes for the day.

Address on State Medicine, by Dr. W. H. Welch, of Baltimore.

Report of Necrologist.

Reading names of newly elected officers of the Sections and Delegates to Foreign Societies.

Introduction of the President-elect by the retiring President.

Response by the former.

Final Adjournment.

PROGRAMME OF SECTIONS.

Section on the Practice of Medicine, Materia Medica, and Physiology.

Chairman—F. C. Shattuck, M.D., Boston.

Secretary—G. A. Fackler, M.D., Cincinnati.

FIRST DAY—JUNE 25.

1. Address of the Chairman.

2. "On the Passage of Portal Blood into the General Circulation, and its Probable Relation to Toxæmia," by Charles G. Stockton, Buffalo, N. Y.

Discussion by William Osler, Baltimore; W. S. Tremaine, U. S. A.; John H. Musser, Philadelphia.

3. "Dioscorea Villosa—Wild Yam," by J. V. Shoemaker, Philadelphia.

4. "New Plan for the Treatment of Pneumonia," by G. R. Martine, Glen's Falls, N. Y.

5. "Some Clinical Aspects of Vomiting," by John H. Musser, Philadelphia.

6. "Differential Diagnosis of Varicella and Varioloid," by James T. Whittaker, Cincinnati.

7. "Some of the Rarer and Graver Forms of Cinchonism," by I. E. Atkinson, Baltimore.

SECOND DAY—JUNE 26.

1. "Chronic Endocarditis," by Francis Delafield, New York City.

Discussion by William Pepper, Philadelphia; W. W. Gannett, Boston.

2. "On the Nature and Treatment of Chlorosis," by William Osler, Baltimore.

3. "Hydronephrosis, especially as Caused by Functional Disorders of Micturition," by Robert T. Edes, Washington, D. C.

4. "The Induction of Premature Labor in Bright's Disease," by James Tyson, Philadelphia.

5. "The Treatment of Epilepsy," by Charles F. Folsom, Boston.

6. "Alkaloidal Medication per Rectum, A New Method of Medication," by Elmer Lee, St. Louis.

7. "Reynaud's Disease," George M. Garland, Boston.

THIRD DAY—JUNE 27.

1. "The Etiology and Pathology of Typhoid Fever," by Victor C. Vaughan, Ann Arbor, Mich.

Discussion by Henry P. Walcott, Cambridge; William Osler, Baltimore.

2. "The Physiological Action of the Typhoid Fever Poison," by N. S. Davis, Jr., Chicago.

3. "Toxic Agents in the Blood as a Cause of Diseases of the Nervous System," by M. R. Crain, Rutland, Vt.

4. "Some Thoughts on the Etiology, Pathology, and Therapeutics of Phthisis Pulmonalis," by W. L. Schenck, Kansas City.

5. "Food in the Treatment of Consumption," by Solomon Solis-Cohen, Philadelphia.

6. "Trophopathy in Fatty and Fibroid Degenerations, with Presentation of Cases of Cure."

7. "The Climate of Salt Lake," by Dr. Bascom, Salt Lake City.

FOURTH DAY—JUNE 28.

1. "The Prophylaxis of Tuberculosis," by James C. Wilson, Philadelphia.

2. "Signs in Disease," by H. M. Brown, Hillsboro, Ohio.

3. "Ulcerative Endocarditis," by J. G. Truax, New York City.

4. "Myalgia," by Gustavus Eliot, New Haven, Conn.

5. "Veratrum Viride in the Treatment of Disease," by Thomas Legaré, Charleston, S. C.

6. "Stomach Rest and Cleanliness," by Mary E. Baldwin, Newport.

7. "Heat as a factor in Disease," by John H. Hollister, Chicago.

Section of Obstetrics and Diseases of Women.

Chairman—W. H. Wathen, M.D., Louisville.

Secretary—A. B. Carpenter, M.D., Cleveland.

1. "Note on the Use of Boric Acid in Gynæcic Practice," by W. W. Potter, M.D., Buffalo, N. Y.

2. "Bimanual Palpation as a Means of Diagnosis in Diseases of the Female Pelvic Organs," by Paul F. Mundè, New York City.

3. "Series of Five Hundred Confinements in a Maternity," by Joseph Price, Philadelphia, Pa.

4. "Observations on Abdominal Section, based on Two Hundred and Fifty Cases," by James B. Hunter, New York City.

5. "A New Procedure of Colpoperineoplasty by Glissement," by A. Doleris, Paris, France.

6. "Stricture of the Urethra in Women," by Ely Van de Warker, Syracuse, N. Y.

7. "The Inversion of the Uterus; Reduction by a New Method; Exhibition of Instruments," by Henry O. Marcy, Boston, Mass.

8. "Observations on Abdominal Surgery, with Report of One Hundred Consecutive Cases Done in the Past Year," by W. Gill Wylie, New York City.

9. "Concealed Pregnancy, Its Relation to Abdominal Surgery," by A. Vander Veer, Albany, N. Y.

10. "The Routine Management of Cases of Acute Intestinal Obstruction," by J. Greig Smith, Bristol, England.

11. "The Medals of Benjamin Rush, Obstetrician," by Horatio R. Storer, Newport, R. I.

12. "The Field and Limitations of Supravaginal Hysterectomy, and Methods of Operating," by L. S. McMurtry, Danville, Ky.

13. "Casuistry in Obstetrics," by Theophilus Parvin, Philadelphia, Pa.

14. "Fœtal Pathology," by W. H. Taylor, Cincinnati, Ohio.

15. "Tetanus following Ovariectomy," by Joseph Tabor Johnson, Washington, D. C.

16. Prof. J. Veit, Berlin, Germany. (Subject not given.)

17. "The Obstetrician as a Counselor," by Thomas Opie, Baltimore, Md.

18. "Injuries to the Bladder during Laparotomy," by A. Reeves Jackson, Chicago, Ill.

19. "Craniotomy and its Indications," by Joseph Hoffman, Philadelphia, Pa.

20. "Glandular Endometritis, Illustrated with Microscopic Projection," by Samuel N. Nelson, Boston, Mass.

21. "Electrical Treatment of Salpingitis, with Observations," A. Apostoli, Paris, France.

22. "Pelvic Abscess in the Female," by Wm. H. Parrish, Philadelphia, Pa.

23. "The Recognition and Treatment of Lacerations of the Cervix by the Obstetrician," by Henry C. Coe, New York City.

24. DeLaskie Miller, Chicago, Ill. (Subject not given.)

25. Prof. Gusserow, Berlin, Germany. (Subject not given.)

26. "Reasons for Drainage in Ovariectomy," by Hampton E. Hill, Saco, Me.

27. "When and What Kind of Obstetrical Forceps Should be Used," by Wm. S. Stewart, Philadelphia, Pa.

28. "Chronic Cystitis in the Female," by Augustus P. Clarke, —, Mass.

29. "Results of Removal of Uterine Appendages After One or More Years," by S. C. Gordon, Portland, Me.

30. "The Indications for, and Limits of, the Operation for the Removal of the Uterine Appendages," by E. E. Montgomery, Philadelphia, Pa.

31. "Observations in Connection with S. Weir Mitchell's Mode of Producing Fat and Blood," by W. H. Bond, St. Louis, Mo.

32. "Peritoneal Effusions," by Wm. H. Meyers, Ft. Wayne, Ind.

33. "The Rectification of Malpositions of the Head by Rotation with the Forceps," by Edward J. Ill, Newark, N. J.

34. "Pregnancy in the Retroverted Uterus, with Cases," by James R. Chadwick, Boston, Mass.

35. "The Therapeutic Value of Electricity in Gynecology," by L. S. Fox, Lowell, Mass.

36. "Alexander's Operation, with a New Method of Securing the Round Ligaments," by A. B. Carpenter, Cleveland, Ohio.

37. "The Use of Glycoboron in Gynecology," by Wm. Thornton Parker, Providence, R. I.

38. Bache McE. Emmet, New York City. (Subject not given.)

39. "Emmet's Buttonhole Operation," by Virgil O. Hardow, Atlanta, Ga.

40. "On the Treatment of Cancer of the Uterus," by Thomas Moore Madden, Dublin, Ireland.

41. W. E. B. Davis, Birmingham, Ala. (Subject not given.)

42. "A New Two-Ways Catheter for Uterine Irrigation," by A. Cordes, Geneva, Switzerland.

43. "The Application of Forceps to Transverse and Oblique Positions of the Head; Description of a New Forceps," by Henry D. Fry, Washington, D. C.

44. "The Galvanic Current in Gynecology," by A. Laphorn Smith, Montreal, Canada.

45. "Tubal Pregnancy; Delivery at Six Months per Vias Naturales; Recovery," by Wm. M. Fineley, Altoona, Pa.

46. Thomas E. McArdle, Washington, D. C. (Subject not given.)

47. George R. Shepherd, Hartford, Conn. (Subject not given.)

48. W. B. Carson, St. Louis, Mo. (Subject not given.)

Section on Surgery and Anatomy.

Chairman—N. P. Dandridge, M.D., Cincinnati.

Secretary—W. O. Roberts, M.D., Louisville.

TUESDAY, JUNE 25—FIRST DAY.

1. "On the Surgery of the Lateral Ventricles of the Brain," by W. W. Keen, Philadelphia.

Discussion, J. Collins Warren, Boston.

2. "Concussion of the Spine in its Medico-Legal Aspect," by H. H. Smith, Philadelphia.

Discussion by Herbert Judd, Galesburg; B. A. Watson, Jersey City; Edmund Andrews, Chicago.

3. "Surgery of Peripheral Nerves," by Maurice Richardson, Boston.

4. "Pathology and Treatment of Chronic Sciatica," by J. G. Carpenter, Stanford, Ky.

5. "Suspension and Extension in the Treatment of Chronic Sciatica," by C. C. Hunt, Dixon, Ill.

6. "Arthrectomy of Knee Joint," by E. H. Bradford, Boston.

WEDNESDAY—SECOND DAY.

1. "The Treatment of Stone in the Urinary Bladder," by W. T. Briggs, Nashville.

2. "Litholapaxy," by A. T. Cabot, Boston.

3. "Litholapaxy in Children," by Dudley Allen, Cleveland.

Discussion—"Choice of Operation for Stone," J. W. S. Gowley, New York; C. T. Gardner, Providence.

4. "Management and Treatment of Large Hernia," by J. Collins Warren, Boston.

5. "Open Wound Treatment of Hernia," by H. O. Marcy, Boston.

6. "Properitoneal Hernia," by Thomas W. Dulles, Philadelphia.

7. "Epicystic Surgical Fistula for Relief of Vesical Catarrh," by J. D. S. Davis, Birmingham, Ala.

THURSDAY—THIRD DAY.

1. "Some Further Considerations and Statistics of Abdominal Sections for Traumatism," by Thos. S. K. Morton, Philadelphia.

2. "Pelvic Surgery by Abdominal Section, its Past, Present and Future," by Jos. W. Price, Philadelphia.

3. "Peritonitis," by J. M. Baldy, Philadelphia.

4. "Drainage in Abdominal Surgery," by Charles B. Penrose, Philadelphia.

5. "A Plea for Early Abdominal Work," by M. Price, Philadelphia.

6. Title not received, by L. S. McMurtry.

7. "Chylous Cyst of Mesentery, with Report of a Case," by N. B. Carson, St. Louis.

8. "The Use, 25 Years Ago, of Polarity, Locating the whereabouts of a Lead Bullet in the Body of a Brave Soldier," by Addinell Hewson, Philadelphia.

9. "Fistula in Ano," by J. M. Matthews, Louisville.

10. "Wiring the Patella in Old Ununited Fracture," by W. C. Will, Danbury.

11. "The Healing of Aseptic Bone Cavities by Implantation of Antiseptic Decalcified Bone," by N. Senn, Milwaukee.

12. "Electrolysis in the Treatment of Stricture of the Rectum," by Robert Newman, New York.

13. "A New Rib Cutter, and a Case of Resection of Ribs for Drainage of a Pulmonary Cavity," by Charles Denison, Denver.

14. "The Absorption of Dead Bone," J. B. Hopkins, Philadelphia.

Section on State Medicine.

Chairman—J. Berrien Lindsley, M.D., Nashville, Tenn.

Secretary—S. T. Armstrong, M.D., U. S. Marine Hospital Service, New York, N. Y.

TUESDAY—JUNE 25, 2 P.M.

Section called to order. Announcement of titles of volunteer papers to be read Friday, June 28.

"The American Medical Association and its Relations to the Public Health," by N. S. Davis, Chicago, Ill.

"International Comity in State Medicine," by John B. Hamilton, Washington, D. C.

"Volunteer Sanitary Organizations as an Aid to Public Boards of Health," by H. R. Storer, Newport, R. I.

"The Importance and Essential Needs of Local Boards of Health," by W. C. Rives, New York, N. Y.

"Modern Sanitary Conditions," by Geo. E. Waring, Jr., Esq., Newport, R. I.

"Rural Sanitation," by Thos. M. Flandrau, Rome, N. Y.

"Report of the Committee on Uniform Medical Legislation in the United States," by Perry H. Millard, Chairman.

"Medical Legislation in the United States," by Perry H. Millard, St. Paul, Minn.

WEDNESDAY—JUNE 26.

Called to order; reading of minutes of preceding meeting.

Annual Address of the Chairman, by J. Berrien Lindsley, Nashville, Tenn.

1. "Quarantine of the Future," by W. C. Van Bibber, Baltimore, Md.

Discussion opened by J. H. VanDeeman, Nashville, Tenn.

2. "Etiological Relations of Water to Disease," by F. L. Sim, Memphis, Tenn.

3. "The Purification of Drinking Water for Cities," by Charles V. Chopin, Providence, R. I.

4. "Bacteriological Examination of Several Native Mineral Waters in the Bottled State," by George Minges, Dubuque, Ia.

5. "Report of the Standing Committee on Meteorological Conditions," by N. S. Davis, Chairman.

6. "The Climatic Causation of Consumption," by Henry B. Baker, Lansing, Mich.

7. "Climatological Characteristics of Salt Lake City," by F. S. Bascom, Utah.

8. "Ranch Life in Texas for Consumptives," by J. R. Briggs, Dallas, Tex.

9. "Biometry, or the Measure of Life as Applied to Life Assurance," by Charles Everett Warren, Boston, Mass.

THURSDAY—JUNE 27.

Called to order; reading of minutes of preceding meeting.

Election of officers for the Section for the ensuing year.

1. "The Necessity for Sanitary Supervision of Schools," by George H. Rohé, Baltimore, Md.

Discussion opened by W. L. Schenck, Osage City, Kas.

2. "Notes on the Progress of Leprosy," by Benjamin Lee, Philadelphia, Pa.

3. "Personal Disinfection in Scarlatina," by L. D. Waterman, Indianapolis, Ind.

4. "Report of the Committee on Fœticide," by I. M. Quimby, Chairman.

5. "The Causation and Restriction of Infantile Mortality," by V. C. Vaughan, Ann Arbor, Mich.

6. "Is it Detrimental to the Health of Passengers on Shipboard to Convey to Port the Bodies of Persons who Die at Sea of Non-contagious Disease?" by I. N. Quimby, Jersey City, N. J.

7. "Disposal of House Refuse," by Alfred L. Carroll, New York, N. Y.

8. "The Benefits of Sanitation Applied to Obstetrical and Gynecological Surgery," by T. A. Ashby, Baltimore, Md.

9. "Stamina," by A. N. Bell, Brooklyn, N. Y.

FRIDAY—JUNE 28.

Called to order; reading of minutes of preceding meeting.

Reading of volunteer papers.

Section on Ophthalmology.

Chairman—George E. Frothingham, Ann Arbor, Mich.

Secretary—G. C. Savage, Nashville, Tenn.

FIRST DAY—JUNE 25.

1. Address by the Chairman, Geo. E. Frothingham, Ann Arbor, Mich., "The Need of Discussing Ophthalmic Subjects."

2. "The Prevention of Pain and the Improvement of the Stump following Evisceration of the Eye," by A. E. Prince, Jacksonville, Ill.

3. "What can we do to Induce the Government to Make the Census of 1890 Contribute Efficiently to a Clear Conception of the Causes of Blindness in the United States," by Robert Tilley, Chicago.

4. "Advances in Our Knowledge of some Cerebral Ocular and Intra-Ocular Lesions which Facilitate the Diagnosis and Treatment of Important Diseases," by H. W. Williams, Boston.

5. "Ocular Symptoms of Diseases and Injuries of the Spinal Cord," by J. F. Fulton, St. Paul, Minn.

6. "Impaired Vision as a Result of Sunstroke," by A. R. Baker, Cleveland, O.

7. "Some Cases of Inflammation and Atrophy of the Optic Nerve, with Special Reference to Etiology and Prognosis," by J. L. Thompson, Indianapolis, Ind.

8. "The Non-Surgical Treatment of Strabismus Convergens," by E. J. Gardiner, Chicago.

9. "Tobacco Amaurosis," by Leartus Connor, Detroit.

10. "Paralysis of Accommodation from Concussion of Eyeball; Treatment," by Eugene Smith, Detroit, Mich.

SECOND DAY—JUNE 26.

1. "A Case of Sympathetic Irido-Choroiditis, Induced by Sarcoma of the Choroid, and Appearing Five Days After the Enucleation of the Sarcomatous Eye," Interesting Clinical History and Final Recovery," by F. C. Hotz, Chicago.

2. "Tumors of the Optic Nerve," by S. C. Ayres, Cincinnati.

3. "The Needless and Annoying Restraints after Eye Operations," by J. J. Chisolm, Baltimore.

4. "The Advantage of a Preliminary Iridectomy in Cataract Extraction," by LeRoy Dibble, Kansas City.

5. "Keratitis Trachomatosis," by J. H. Thompson, Kansas City.

6. "Gradation of Lenses," by Dudley S. Reynolds, Louisville.

7. "Glaucoma Fulminans, after Operations," by P. D. Keyser, Philadelphia.

THIRD DAY—JUNE 27.

1. "Traumatism of the Eye," by C. M. Hobbs, Iowa City.

2. "Ametropia in Schools," by F. B. Tiffany, Kansas City.

3. "The Ametropiæ and Their Relation to Insufficiencies of the Recti Muscles," by J. W. Wright, Columbus, O.

4. "Embolus of the Inferior Branch of the Retinal Artery Visible with the Ophthalmoscope, Disappearance of Embolus and Recovery of the

Greater Part of Visual Field under Massage and Nitrite of Amyl," by H. Gifford, Omaha, Neb.

5. "Intra-Ocular Diseases Caused by Chronic Rhinitis," by J. G. Sinclair, Nashville, Tenn.

Other papers have been promised; but as yet the subjects have not been announced. All who expect to read papers are requested to send the title at once, either to the Chairman or Secretary of the Section, otherwise they can not be placed upon the programme of proceedings, which will be published soon by the Committee of Arrangements.

Section on Diseases of Children.

Chairman—J. A. Larrabee, M.D., Louisville.

Secretary—C. J. Jennings, M.D., Detroit.

FIRST DAY, JUNE 25.

1. "The Management of Infants during the First Year," by T. B. Greenley, West Point, Ky.

2. "Cow's Milk for Infant Food," by E. F. Brush, Mt. Vernon, N. Y.

3. "Summer Diarrhoea and Dysentery" by N. Guhmann, St. Louis, Mo.

4. "Intestinal Diseases of Children during Hot Weather," by Peter Hooper, Philadelphia, Pa.

5. "Cholera Infantum, its Etiology and Treatment," by Steele Bailey, Stanford, Ky.

SECOND DAY, JUNE 26.

1. "Heart Failure in Diphtheria," by Geo. Wheeler Jones, Danville, O.

2. "Intubation of the Larynx, with Reports of Cases," by F. E. Waxham, Chicago, Ill.

3. "Scarlatina" by C. R. Earley, Ridgeway, Pa.

4. "Pathology and Treatment of Certain Complications of Scarlet Fever," by Talbot Jones, St. Paul, Minn.

5. "The Value of Hydrogen Dioxide in the Treatment of Diseases of Children," by Marcus P. Hatfield, Chicago, Ill.

6. "A Rule with Penalty in Public Schools," by David I. Booth, Sparta, Ill.

7. "Poliomyelitis Anterior Acuta," by S. P. Deahofe, Potsdam, O.

THIRD DAY, JUNE 27.

1. "Serious Abdominal Injuries of Children, Resulting from Traumatisms Seemingly Trivial," by I. N. Love, St. Louis, Mo.

2. "Visceral Neuralgias in Children," by J. C. Wilson, Philadelphia, Pa.

3. "Atropine in Eneuresis," by Wm. Perry Watson, Jersey City, N. J.

4. "Adherent Præputium Clitoridis as a Cause of Chorea, with Report of a Case," by C. Henri Leonard, Detroit, Mich.

5. "A Further Study of the Cardiac Relations of Chorea," by Wm. Osler, Philadelphia, Pa.

6. "The Treatment of Heart Disease in Children," by J. A. Robison, Chicago, Ill.

FOURTH DAY, JUNE 28.

1. "The Physical Education of Children;" by A. H. P. Leuf, Philadelphia, Pa.
2. "The Treatment of Tubercular Bone Lesions before the Joint is Invaded," by V. P. Gibney, New York.
3. "Notes on Surgical Diseases of Children," by Edwin Brock, St. Louis, Mo.
4. "Spine Bifida," by Norman Teal, Kendallville, Ky.
5. "Trismus Nascentiam," by A. V. Williams, Frankfort, Ky.

Papers have been promised from Jerome Walker, Brooklyn, N. Y., W. B. Atkinson, Philadelphia, Pa.

Section of Dental and Oral Surgery.

Chairman—F. H. Rehwinkle, Chillicothe, O.
Secretary—E. S. Talbot, Chicago.

TUESDAY, JUNE 25.

Address by T. H. Rehwinkle, Chairman.

1. "Facial Neuralgia Associated with Pregnancy," by W. W. Allport.

WEDNESDAY, JUNE 26.

1. "Diseases of the Antrum," by Wm. Carr.
2. "Fissures," by R. R. Andrews.

THURSDAY, JUNE 27.

1. "Care of the Teeth of Pregnant Women," by John Marshall.
 2. "Statistics of Irregularities of the Teeth of Normal Individuals, the Idiotic, Deaf and Dumb, Blind and Insane," by Eugene S. Talbot.
- Numerous other papers have been promised.

Section of Medical Jurisprudence.

Chairman—J. G. Kiernan, M.D., Chicago.
Secretary—S. C. Evans, M.D., Baltimore.

FIRST DAY, JUNE 25.

1. "History of Medical Jurisprudence," by Judge Amos G. Hull, New York.

SECOND DAY, JUNE 26.

1. "Tests of Insanity," by H. N. Moyer, Chicago.
2. "Monomania," by Clark Bell, New York.
3. "Legal Decisions on Insanity"—Chairman's Address, by Jas. G. Kiernan, Chicago.
4. "Massachusetts Insanity Laws," by T. W. Fisher, Boston.
5. "Illinois Insanity Laws," by Harriet C. B. Alexander, Chicago.

THIRD DAY, JUNE 27.

1. "Legal Aspects of Inebriety," by T. L. Wright, Bellefontaine, Ohio.
2. "Inebriate Criminals," by T. D. Crothers, Hartford, Conn.

3. "Social Aspects of Alcoholism," by E. C. Spitzka, New York.

FOURTH DAY, JUNE 28.

1. "Spinal Concussion," by S. V. Clevenger, Chicago.

Section on Dermatology and Syphilography.

Chairman—L. Duncan Bulkley, New York.
Secretary—W. T. Corlett, Cincinnati, O.

FIRST DAY, JUNE 25.

1. Address by the Chairman, "Recent Advances in the Treatment of Diseases of the Skin."
2. Discussion on "The Treatment of Tinea Tonsurans," opened by W. T. Corlett, and Henry Fleischner."
3. "The Prophylaxis of Ringworm of the Scalp," by Fred. J. Leviser, New York.
4. "Some notes on Hoang-nan," by J. V. Shoemaker, Philadelphia.
5. Analysis of 250 Cases of eczem-seborrhoicum," by George T. Elliot, New York.
6. "Prurigo hiemalis, or Winter Itch," by W. T. Corlett, Cleveland, Ohio.
7. "Dermatitis Exfoliativa," by E. N. Brush, Philadelphia.

SECOND DAY, JUNE 26.

1. "Discussion on 'The Indications for and Duration of the Treatment of Syphilis,' opened by L. Duncan Bulkley, or another.
2. "The Positive Diagnosis of Syphilis," by Ephraim Cutter, of New York.
3. "On Pruritus," by Henry Fleischner, New Haven, Conn.
4. "A Case of Painful Subcutaneous Neuroma (Neuro-fibroma)," by J. Abbott Cantrell, Philadelphia.
5. "Relations between Acne and Diseases of the Nasal Cavity," by Carl Seiler, Philadelphia.
6. "Answers to questions Deposited in Question Box Relating to Dermatology or Syphilography."

THIRD DAY, JUNE 27.

1. "A Case of Kraurosis Vulvæ," by A. H. Ohman-Dumesnil, of St. Louis, Mo.
2. "Use and Abuse of Soap and Water," by Merrill Ricketts, Cincinnati, O.
3. "The Treatment of Felon without Incision," by J. S. Miller, York, Penn.
4. "The Early Recognition and Treatment of Epithelioma," by L. Duncan, Bulkley, New York.

Section on Laryngology and Otology.

Chairman—W. H. Daly, M.D., Pittsburg.
Secretary—E. F. Ingals, M.D., Chicago.

1. "The Third Tonsil; Its Important Relation to Naso-Pharyngeal and Naso-Aural Catarrh," by Joseph A. White.

2. "Adenoid Hypertrophy of Vault of Pharynx—Pathology and Treatment," by Bryson Delevan.

3. "The Benefits to be Derived from the Radical Operation for the Relief of Nasal Stenosis," by Holbrook Curtis.

4. "Obstruction of the Nares Causing Nervousness," by Hal Foster.

5. "Empyema of the Frontal Sinus," by Geo. A. Richards.

6. "Clinical Notes," by J. D. Arnold.

7. Short Address, by Lennox Brown.

8. "An Analysis of One Hundred Cases of Cough Cured by Adoption of Operative Procedure in the Treatment of Existing Morbid State of Nasal Cavities," by J. E. Schadle.

9. "Clinical Observations in a Number of Cases," by Carl Seiler.

10. "A New Gag, and Some Conservative Observations about Intubation," by Chas. Denison.

11. "Internal Ear Deafness, Illustrated with Cases," by J. G. Carpenter.

12. "On the Value of Antiseptic Treatment of and Protection of Membrana Tympani in Perforation," by Laurence Turnbull.

13. "Report of Cases of Dangerous Middle-Ear and Mastoid Inflammations, which followed Treatment of Naso-Pharynx," by J. L. Thompson.

14. "Observations upon the Effect of Nasal Obstruction on the Middle-Ear," by F. Whitehall Hinkel.

15. "The Indications for the Excision of the Drumhead of the Ear," by Samuel Sexton.

16. "The Possible Danger to Middle-Ear as a Result of Nasal Atomization," by C. W. Richardson.

17. "Nasal Polypi in Children, and Double Uvula," by John McKenzie.

18. "The Relation of Tonsillitis to Rheumatism," by S. J. Radcliff.

19. "Morbid Perforations of Nasal Septum," by A. B. Thrasher.

20. "Perforating Ulcer of the Septum Narium," by Max Thorner.

21. "Chronic Obstipation of the Nares; Hernia," by W. Freudenthal.

22. "Affections of the Throat as Evidence of Diseases in other Localities," by Jas. E. Logan.

23. "Epilepsy Caused by Intra-Nasal Disease," by F. S. Crossfield.

24. "Effects of Natural Gas upon Upper Air Passages," by D. W. Rankin.

25. "The Influence of Disorders of Digestion on Catarrh of Air Passages," by A. M. Duncan.

26. "The Treatment of Acute Naso-Pharyngeal Catarrh," by S. S. Bishop.

27. "Congenital Occlusion of Naso-Pharynx, with Report of Two Cases," by F. O. Stockton.

28. "On the Use of Menthol in Upper Air Passages," by Frank H. Potter.

29. "Menthol in Laryngeal Phthisis," by C. H. Knight.

30. "Sclerosis of Mastoid Cells," by J. B. Lippincott.

31. "Malignant Tumors of Larynx," by H. A. Johnson.

32. "Laryngeal Gummata," by Robert Levy.

33. Glandular Hypertrophies at the Base of Tongue," by John O. Roe.

34. "A Case of Acute Rheumatic Laryngitis of Gonorrhœal Origin," by Wm. K. Simpson.

35. "Abscess of the Antrum of Highmore; Its Diagnosis and Treatment," by J. H. Bryan.

36. Nasal Bacteria," by Jonathan Wright.

37. "Treatment of Cystic Goitre," by E. Fletcher Ingals.

Papers are also expected from the following, but the titles have not been received:

Drs. E. L. Shurly, Louis Jurist, Wm. Porter, J. Mount Bleyer, Chas. E. Sajous, Thos. Legaré, Chas. Stover Allen, J. Solis-Cohen, C. E. Bean, F. I. Knight, W. E. Casselberry, E. R. Lewis.

Others desirous of reading papers in any of the Sections should at once send the title of their paper to Dr. H. R. Storer, Newport R. I., and to the Chairman of the Section in which they wish to read it.

HOTELS.

In Newport.—Ocean House, Bellevue Ave., \$4 per day, (special rate); The Aquidneck, Pelham St., \$3 per day, (special rate); Brayton House, Pelham St.; Cliff Ave. Hotel, on the Cliffs, \$2.50-\$3; Perry House, Washington Square; Central House, 14 Bath Road.

In Jamestown.—(Eighteen minutes by steam ferry from Newport. Boat making trips about every hour, each way.) Bay View House, C. T. Knowles, \$2 per day; Gardner House, Gardner & Littlefield, about \$2 per day; Prospect House, C. E. Weeden, \$2 per day; Champlins', Wm. A. Champlin, \$1.50 per day.

A list of Boarding Houses and Railroad rates will be published in the next issue of THE JOURNAL.

COMMENCEMENT WEEK AT YALE.—Prof. H. C. Wood, M.D., of Philadelphia, will deliver the annual address in Medicine at Yale University on Tuesday, June 25, at 12 M., and in the evening of the same day a reception will be tendered to Dr. Wood at the residence of Dr. C. A. Lindsley, 15 Elm St., New Haven, to which the profession is invited.

REMEDY AGAINST SEA-SICKNESS.—Dr. Franz Heller, of Vienna, claims he has discovered a sure remedy for this troublesome *compagnon de voyage*. It consists simply in keeping the body level by following the motions of the vessel, bending the right knee as the vessel rises to that side, and then the left as the motions are reversed.

PROFESSOR VIRCHOW is said to be re-writing an edition of his great work on "Cellular Pathology."

Music Hall, Bellevue, Ave., between Casino and Ocean House.
 Miantonomi Hill, an elevation 150 feet in height, a mile and a half north of Washington Square.
 Newport Artillery Armory, Clark.
 Newport Historical Society Building, next above Jewish Synagogue on Touro.
 Newport Reading Room, cor. Church St. and Bellevue Ave.
 Newport Hospital, 16 Howard Ave. and Friendship St.
 Opera House, Washington Square.
 Old Stone Mill, Touro Park.
 Ochre Point, off Marine and Ruggles Aves.
 Perry Statues: Com. Oliver Hazard Perry, Washington Square; Com. M. C. Perry, Touro Park.
 Parade, Washington Square.
 People's Free Library, 260 Thames.
 Polo Grounds, north end Thames.
 Price's Neck, Ocean Road, beyond Cherry Neck, U. S. Life Saving Station at its extremity.
 Purgatory, on Cliffs west of Sachuest Beach.
 Rough Point, off F. W. Vanderbilt's house, Bellevue Ave.
 Rocky Farm Gully, off Ocean road, south from Lily Pond.
 Ragged Point, the southern point of Castle Hill.
 Ramshad, Castle Hill.
 Redwood Library, Bellevue Ave., near Touro Park.
 Sachuest Beach, beyond Easton's Beach.
 St. Mary's Church (R. C.), corner of Levins and Spring.
 State House, head Washington Square.
 Sheep Point, Cliffs off Yznaga Ave.
 Sporting Rock, west of Bailey's Beach.
 Telegraph Hill, Beacon Road, about five miles south of Washington Square.
 The Glen, about six miles north, on east shore of Island.
 Touro Park, Bellevue Ave, Pelham and Mill.
 Trinity Church, Spring, corner Church.
 United Congregational Church, corner Pelham and Spring.
 U. S. Custom House and Post Office, cor. Thames and Franklin.
 U. S. Engineer's office.
 U. S. Torpedo Station, Goat Island.
 U. S. Naval Training Station, including Training Ship "New Hampshire," and the War College, on Coaster's Harbor Island.
 Vernon House (old), corner Clark and Mary.
 Water Works, Pumping Station, north shore Easton's Pond.
 Washington Square, Thames and Touro.
 Whitehall, back of Happy Valley, ancient residence of Bishop Berkley.

MISCELLANY.

TREATMENT OF GOUT.—Apropos of the action of medicaments against gout, the following was communicated by Professor Brown-Séquard to the Biological Society, of Paris:

The remedy so well known under the name of Laville sometimes succeeds marvelously in gout, as may be testified by the following examples which came under my observation.

Fleury, former Agrégé of the Faculty, author of several works on hydropathy, was seized with an attack of complete paralysis of the right side, with anæsthesia and aphasia. Some precursory symptoms manifested themselves the day before, he had recommended for the case, in which the patient could neither speak nor write, that a strong dose of the Liqueur de Laville should be given. Two hours after the paralytic symptoms disappeared.

Le Practicien remarks that cases of this kind, which are not rare, show the happy influence of anti-gouty remedies in the accidents of visceral gout, the development of which was formerly attributed to the action itself of these medicaments, without taking into account that the cases of gout going to the brain, to the heart, to the stomach, are nothing else than cases of gastric or cerebral uræmia, of fatty degeneration of the heart, caused by gouty lesions of the kidneys and of the heart. The surest means of preventing these accidents is, according to the best modern observers, the adoption of the anti-gouty medication at the proper time.

In his "Treatise on Gout," Dr. Lecorché thus formulated his opinion on the subject: "It is an error that the generality of physicians, too confident in ancient precepts, content themselves, in the presence of gouty manifestations, to advise expectation, one should not hesitate to combat them. Such at least has always been our rule, and we have never had any accidents to deplore. We are even convinced that it is dangerous to act otherwise. In

respecting these manifestations, in allowing them to follow the regular course of their evolution, one facilitates not only the appearance of local lesions often irremediable, we leave to the diathesis the time and the facility to evolve and to lead patients fatally to a state of cachexia, whereas by an energetic medication, properly employed, the progress of the malady is checked, if it does not lead to cure."

The success obtained by Dr. Lecorché in hospital as well as private practice, is due to the judicious employment of the specifics of gout. The observations consigned in the "Treatise on Gout" leave no doubt whatever on the subject.

Extract of Case xcix (page 380): "Articular gout with multiple attacks. G., aged 60 years. The patient had tried every species of medication, with results more or less satisfactory, but of all the medications, that which succeeded the best, and which succeeded in insignificant doses is the Liqueur Laville, and it did not produce in the patient either perspiration or diarrhoea. He had scarcely taken the medicine, when he experienced an internal sensation which indicated that it was going to act on the part affected."

Extract of Case lxxv (page 532): "Gouty cephalalgia cured by the Liqueur de Laville. G., aged 40 years. Several gouty members in his family, both on the paternal and maternal side. According to the patient's statement, he never had any true attacks of articular gout. Now and then, he felt, in a transitory manner, pains in the toes. They were the only manifestations which he had commonly, with frequent attacks of migraine, till the year 1881. In 1881 he was seized with an atrocious cephalalgia, localized at the back of the neck, and which he said was altogether distinct from migraine. This cephalalgia, particularly marked at night, and which resisted every medication, even specific, and which yielded, and that in a manner almost instantaneous, only to the use of the Liqueur Laville. In the Spring of 1882, he had a fresh return of this pain, localized at the level of the eyebrows, which this time also could only be dissipated by the Liqueur Laville."—*Extract from "Treatise on Gout," by Dr. Lecorché.*

MEDICAL NUMISMATICS—Dr. Horatio R. Storer, of Newport, R. I., who has for several years been making researches in medical numismatics, will be glad of the aid of the profession in this direction and will give due credit for all information of the kind. Dr. S. has thus far published the following papers upon the subject: "The Medals, Jetons and Tokens Illustrative of Midwifery and the Diseases of Women"—*New England Medical Monthly*, November, December, 1886; "The Medals, Jetons and Tokens Illustrative of Sanitation"—*The Sanitarian*, May, July, August, October, 1887, February, April, July, August, November, 1888, February, March, April, 1889 (not yet completed); "The Goethe Medals"—*Amer. Journal of Numismatics*, October, 1887, January, 1888; "The Medals of Guislain"—*Medico-Legal Journal*, December, 1887; "Les Médailles de la Princesse Charlotte d'Angleterre, Première Femme du Roi Leopold Ier de Belgique"—*Révue belge de numismatique*, January, 1888; "The Medals of St. Charles Borromeo, Cardinal, Archbishop of Milan"—*Amer. Journal of Numismatics*, July, October, 1888; "The Medals, Jetons, and Tokens Illustrative of the Science of Medicine"—*Ibid.*, January, April, 1889 (to be continued). He will present a paper upon "The Medals of Benjamin Rush, Obstetrician," at the coming meeting of the American Medical Association.

THE MITCHELL (IND.) DISTRICT MEDICAL SOCIETY will meet at West Baden, Ind., Thursday and Friday, June 13 and 14, 1889. Papers of interest to the entire profession will be presented at the meeting. Reduced rates on railroads have been secured. Special hotel rates.

THE

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, JUNE 1, 1889.

No. 22.

ADDRESS.

PRESIDENTIAL ADDRESS.

Delivered before the Kentucky State Medical Society at its Thirty-Fourth Annual Session, held in Richmond, May 8, 9, and 10, 1889.

BY L. S. McMURTRY, A.M., M.D.

Fellow-Members of the Kentucky State Medical Society.—Thirty-eight years have elapsed since a convention of Physicians of Kentucky was held in the Senate-Chamber at Frankfort, to consider the necessity of organizing a State Medical Society. In effecting permanent organization, the constitution, which was a model of simplicity and conciseness, declared the purposes of the organization in this language:

"First. The cultivation and advancement of medical science and literature by the collection, diffusion, interchange, presentation, and general circulation of medical knowledge throughout the State.

"Second. The establishment and maintenance of union, harmony, and good government among its members, thereby promoting the character and usefulness of the profession."

In October, 1852, the second annual meeting of the society was held in the circuit-court room in Louisville, when the real work of the society was inaugurated. At this meeting the original members were nineteen in number, and included the familiar and memorable names of Breckinridge, Chipley, Dudley, Flint, Force, Gross, Miller, Letcher, Richardson, Sutton, Sneed, and Spillman. Forty-six physicians were added to the membership at this meeting, among others the names of Bell, Caldwell, Ewing, Hewitt, L. P. Vandell, Lewis Rogers, Powell, Bartlett, Wible, Peter, and Bullitt are found, names familiar to Kentucky people and to students of medical science.

At this meeting Professor Henry Miller made a report on the progress of Obstetrics, a duty for which his original work and superior knowledge eminently fitted him; and Professor Gross read his famous report on Kentucky Surgery. Dr. W. S. Chipley contributed a report on Vital Statistics, in which he gave an exhaustive report of the sanitary condition of the State, illustrated

by a valuable map prepared under his direction, the result of a sanitary survey of the State. The counties are arranged in colors with reference to their mortality and the prevalence of disease. Dr. C. H. Spillman, of Harrodsburg, who is still among us respected and honored, made an elaborate report on the Indigenous Botany of Kentucky. The first volume of Transactions was indeed a valuable contribution to medical science and literature. The work done at this meeting demonstrated the facts: First, that an organization for promoting the science of medicine and improving the sanitary condition of our people was needed; second, that the profession in Kentucky was thoroughly imbued with the scientific spirit, and in ability, culture and attainments conspicuously in advance of the age.

Briefly and imperfectly I have sketched the origin and foundation of the society which has assembled here this evening in its 34th annual session. At the time to which I have referred—1852—there were 982,405 inhabitants in the State of Kentucky, and 1,470 physicians. In Lexington, afterward removed to Louisville, a centre of medical education had already been established, drawing to its instructions large numbers of pupils from the great domain west and south of the Alleghanies. The fame of McDowell, Dudley, Drake, Caldwell, Gross and their colleagues had already extended far and near. These were the surroundings and the fields in which our predecessors labored. And now that thirty-eight years have elapsed, with regular annual meetings, save during the four years of civil war, may we not pertinently inquire, what has been accomplished? How can we of the present, best discharge the duty committed to us by our predecessors? What of the future? These are questions which well deserve our thoughtful consideration.

As has already been stated the original constitution declares the chief and first purpose of this organization to be "the cultivation and advancement of medical science and literature, by the collection, diffusion, interchange, preservation, and general circulation of medical knowledge throughout the State." The earnestness of this purpose was attested in 1852 by the historic papers already mentioned, which may be found in the first volume of our Transactions. The time at my command will

not permit even an enumeration of the many important contributions to medical science and literature made through the medium of this society and published in the Transactions through all these years. Elaborate researches and clinical studies bearing upon the various departments of pathology, surgery, and midwifery constitute the major portion of the Transactions. Through the several standing and special committees all the great advances in medical science and every improvement in the art of medicine and surgery have been quickly brought to the attention of the society. Papers bearing upon improvements in medical education have found a place almost every year, and questions relating to Sanitary Science have been a conspicuous feature of our proceedings. By oft-repeated suggestion and indefatigable labor through appropriate committees, the act of the General Assembly establishing the State Board of Health was secured, more recently by the exertion of the able and efficient executive officer of the Board of Health, with the active coöperation of this society, our legislature was brought to realize the importance of further protecting the public health, and passed a law regulating the practice of medicine in this Commonwealth. The custom of holding the annual meetings at various points in the State, observed since the foundation of the society, has of itself promoted the declared purpose of the society by awaking the profession's interest in scientific work and diffusing knowledge. By this means too, county medical societies have been developed and encouraged.

The second purpose enunciated in the constitution relates to elevating the character of the profession. Through this society, from its foundation to the present time, appeals have been constantly made for elevating the standard of professional rectitude, and exposing the evils of charlatantry.

If time and patience permitted, I might enumerate many of the indirect influences exerted by this society in diffusing knowledge, improving the resources of our art, and advancing the public welfare. The charitable institutions of our State have at all times elicited the interest of our society. Our delegates have annually occupied their places in the American Medical Association, and contributed liberally to its proceedings.

From what I have stated relative to the status of the profession in Kentucky at the time this body was organized, it is seen that the standard of Kentucky medicine was conspicuously high. The metropolis of the State has continued to be, and is now, a centre of medical education for the south-west. The medical periodicals edited and published in Kentucky are numerous and of a high order of scientific merit. To these the members of this society have been constant contributors. In 1879 it was decided by the society

that its papers and proceedings could be best disseminated through the medical journals of the State, and the annual volume of Transactions was discontinued. The last volume published by the society was the McDowell Memorial volume, containing the oration of Professor Gross and other papers incident to the dedication of the McDowell monument which was erected by the society in Danville in 1879.

An examination of the series of volumes entitled the "Transactions of the Kentucky State Medical Society" enables one to trace the progress of medicine through these years of activity in every department of our art. As knowledge grew apace, and concentration of energy with the necessary division of labor obtained, specialists in medical practice were developed. These gentlemen representing the various specialties, have been for years past the most active and valued contributors to the work of the annual sessions. At the same time the great body of the society is composed of general practitioners, whose studies and observations in general medicine and surgery compose the greater portion of our proceedings and are equally instructive and valuable. Indeed, here, as elsewhere in our profession, many of the most important and original contributions to medical science have emanated from the practical country doctor. So it obtains that the specialist brings here the results of his expert training and concentrated labor to enrich the knowledge of the general practitioner; while the general practitioner strengthens and enlarges the specialist's knowledge in those lines wherein his work began, and with which his special work is of necessity closely related. In thus glancing hastily back over the thirty-three annual meetings, it is not my purpose to present an optimistic view of our society's labors and their results. Perfection is seldom attained in human institutions or human efforts. There are many features of our annual meetings which could be improved. Each year witnesses improvement in some part of our exercises. This is probably most notable of late in the large number of papers presented at the meetings, in the discussions arranged beforehand by the Secretary, and the improved arrangements for reporting and publishing the papers and discussions.

It would also be unfaithful to the record to depict our society's history as a smooth career of harmonious discussion and unanimity of sentiment, opinion and desire. Numerous breezes and some storms have swept across our floor, but these are necessary to progress, and doubtless purify the atmosphere and encourage wholesome growth.

Our organization has not been without its critics and reformers. They are both within and without. The occasional attendant, who seldom, if ever, contributes a paper or participates in the

discussions, expresses his disapproval of those most active in the society's proceedings, claiming that they monopolize the time of the society; forgetting that the attention of the society can be readily had by himself whenever he chooses, unmindful apparently that the most active members are those who make the society what it is, and extend its usefulness. The reformer often appears upon the floor with resolutions to amend the rules and mode of organization of the society, only to show oftentimes that he has not carefully read our constitution and by-laws. From time to time a momentary enthusiasm appears in the form of a proposition to organize a new State Society upon some ideal basis, forgetting that such institutions are built up through years of steadfast labor, and cannot be created in full vigor in a night; and overlooking the important fact that any suggestions looking to improved efficiency are sure of respectful attention upon this floor. The most certain and the speediest way to improve the efficiency of the society, is to attend the annual meetings, and take part in the discussions. If in 1851 in our sparsely settled State our predecessors realized the necessity of organization for the cultivation of medical science, surely the obligation to enrich and improve the efficiency of that organization is now increased. The population of Kentucky has almost been doubled, the number of physicians greatly increased, and the science and practice of medicine and surgery advanced to a degree of perfection beyond the most sanguine expectations of the past generation. In all departments of our art is to be seen the greatest activity, and never before in the history of medicine was there such a demand upon the physician's powers to keep abreast in the line of advance.

ORIGINAL ARTICLES.

PRIMARY SARCOMA OF THE LUNG.

BY A. F. BOCK, M.D.,
OF ST. LOUIS, MO.

On the 13th of September, 1888, I was called to see Bertha F., æt. 5, of German parentage. Family history exceptionally good, parents strong and healthy. Patient had four sisters and one brother, all healthy. Grandparents still living with the exception of the maternal grandmother, who died about two years ago of chronic senile gangrene. According to the mother's statement the child had been ill since about July 20 last, when she was taken with a high fever (105°) and complained of severe pain in her left side; which continued with more or less severity until she died. As the fever yielded to quinine it was no doubt of malarial origin. While under my ob-

servation there was no increase of temperature, no cough nor expectoration. The right half of the body was constantly bathed in perspiration, the left always dry. There was very little desire for food, but no difficulty in swallowing. Sleep much disturbed by dyspnoea. Pulse ranged between 95 and 110. Previous to July 20 the child had been enjoying good health with the exception of occasional slight ailments. Inspection showed the left thorax considerably increased in size, the intercostal spaces not flattened but stretched; œdema very slight. No movements of the affected side on inspiration and expiration, but a fulness in the epigastrium as if the diaphragm were thrust downwards and forwards. The superficial veins over the left thorax, face and neck were distended. Emaciation of the whole body very marked. Percussion sound flat over the entire area of left lung. Auscultation of the affected lung showed total silence in regard to respiratory sounds. Heart sounds and beat were to the right of the sternum and below the nipple somewhat accelerated and weak, but otherwise normal. Palpation showed absence of vocal thrill.

The history, symptoms and physical signs in this case coincided so closely with those of empyema that Drs. Mullhall and Östertag, who were called in consultation, concurred in the opinion that the phenomena which the patient exhibited could only be due to purulent effusion in the pleural cavity. Two days previous to Dr. Mullhall's consultation I introduced a needle in the seventh intercostal space a little in front of the axillary line, drawing only a small quantity of apparently sero-purulent fluid. In order to allay the unmanageable struggles of the child a few whiffs of chloroform were administered, but this was soon abandoned on account of alarming symptoms of heart-failure setting in. No further attempts at tapping were made that day. Two days later, with Drs. Mullhall and Östertag present two more punctures were made with the same result. As the needle was perfectly movable in the mass, it was thought the contents of the chest were too thick to pass through the needle, and while considering for a moment the propriety of making an incision the child suddenly became cyanotic, struggled for breath, and in less than a quarter of an hour expired, all efforts at resuscitation proving fruitless.

Post-mortem twenty-four hours later. On opening the thorax the heart was found pushed over to the right side beyond the right margin of the sternum; the pericardium contained a small quantity of serum. The entire thoracic cavity of the left side was occupied by a white, moderately soft mass, in which no distinct lung-structure could be seen. The left bronchus was entirely obliterated. The heart, the right lung, the spleen and liver showed no sign of disease or secondary degeneration. The neighboring lymphatic glands were

not enlarged nor otherwise diseased. The tumor was easily removed, as there were no adhesions except a cord-like pedicle about the size of a little finger at the root of the lung, containing the blood-vessels that nourished the tumor. The tumor weighed 3 lbs., $3\frac{1}{2}$ ozs., was $6\frac{1}{2}$ inches long, 7 inches broad and $16\frac{1}{2}$ inches in circumference.

Dr. L. Bremer, of this city; to whom the tumor was sent for microscopical examination, made the following report: The tumor is oval-shaped, has the size and form of a human brain minus the cerebellum. A longitudinal median incision makes the resemblance to the two hemispheres a very close one. Its color and consistence is that of brain substance, thus resembling, on coarse inspection, the class of tumors termed encephaloid. Minute examination with the microscope, however, shows that, though a malignant tumor, it is not an encephaloid, if by this name the soft and rapidly growing variety of carcinoma is understood. The surface of the tumor is uneven, recalling the convolutions and depressions of a brain. Sections of its substance reveal in some places a homogeneous white substance; in others it looks marbled, owing to many hæmorrhages which have taken place. These hæmorrhages have also caused many more or less circumscribed softened spots throughout the tumor. An enveloping mass varying between $\frac{1}{2}$ and 1 line in thickness, and of apparently denser consistence, surrounds the tumor and corresponds to the visceral layer of the pleura.

Thin sections of the tumor examined under the microscope show circular and spindle-shaped bodies of considerable size, besides fat globules of variable diameter. Stained with borax carmine and examined in glycerine the spindle cells become more manifest, and it is now clear that the object under examination is a large spindle-celled sarcoma undergoing fatty degeneration. A specimen stained in the same manner but examined after dehydration, in oil of cloves and Canada balsam exhibits large oblong and round nuclei (the latter being the transverse sections of the former) with very little more or less homogeneous or slightly fibrillar basis substance.

Primary spindle-celled sarcomata of the lungs, it seems, are very rare. Other varieties, as carcinomata, adenomata, fibromata, osteomata, and enchondromata, seem to be of somewhat more frequent occurrence as primary tumors of this organ. As a rule, all tumors of the lung are secondary growths. J. S. Billings, Surg. U. S. A., in charge of Library of the Surg.-General's office, Washington, D. C., says: "The only distinctly recognized primary spindle-celled sarcoma of the lung of which I have any note, is that reported by Chiari in the *Wiener Medizinische Presse*, 1878, vol. xix, p. 112. In the 'Transactions of the Pathological Society of London,' vol. ix, 1858, p. 31, Dr. Wilks reports a case of primary tumor of

the lung composed of long nucleated fibres lying side by side, which was probably of the same character. Also in the *Revue Médicale de l'Est*, vol. iv, 1875, p. 119, Dr. E. Demange reports a case of primitive sarcoma of the lung with thrombosis of the pulmonary artery. The tissue of the tumor is composed of fusiform cells with long prolongations, forming what he calls a fasciculated sarcoma, which I take to be the same thing as the spindle-celled sarcoma."

The best authenticated case of primary sarcoma of the lung is that of Dr. L. Ruetimeyer, published in the *Schweitzer Aerztl. Correspond. Blatt.*, 1886, No. 7. He too had mistaken the condition for empyema, and it was the dry tapping that led him to suspect a tumor. Only the lower lobe of the left lung, however, was changed into a sarcomatous mass.

To distinguish such tumors of the lung from empyema, for which it seems they are universally mistaken, there is, I believe, no certain sign, except that elicited by the exploring needle, which must, however, not be too small, and must be inserted at various points in the intercostal spaces, and to a considerable depth. The exuding fluid should be subjected to a microscopic examination, which may possibly reveal the nature of the disease. In my case, owing to an accident, a microscopic examination was not made. The diagnosis in these cases may furthermore be facilitated by considering the peculiarly even distension of the thorax, barrel-shaped; the stretched but not bulging intercostal spaces; the passive dilatation of the superficial veins on the affected side; the greater resistance felt by the finger on percussion; and the total absence of respiratory sounds on the affected side.

ON THE MANAGEMENT OF FUNCTIONAL DISORDERS OF THE STOMACH.

Read before the Georgia State Medical Association, at Macon, Ga., April 19, 1889.

BY P. R. CORTELYOU, A.M., M.D.
OF MARIETTA, GA.

In calling the attention of this Association for a short time to some points "On the Management of Functional Disorders of the Stomach," I am fully aware that the subject is trite, and that nothing especially new can be said in regard to it. That it has been thoroughly written on by able and scholarly minds, and that in a manner so fully that it would be hard indeed to add even a few threads of purely original thought. My apology, if one be necessary, must be found in this—that it is not the rare and infrequent diseases that most often perplex the daily practitioner, but the more common maladies of every day life, and those which often are considered to be of little special interest;

yet it is often in these very cases that our patients expect and look for speedy relief.

It is not my purpose, nor is it necessary at this time that we should discuss the physiology of gastric digestion, nor the importance of its proper performance, for the securing of good health. Suffice it to say that the stomach is one of the most important, as well as perhaps the most abused organ in the human system. Some ancient solon has said, "Keep the head cool, the feet warm, and the stomach all right, and you will have little need of doctors." However that may be, we know that the condition of the stomach is at the foundation of many diseases.

When we consider what the human stomach has to endure, in receiving into it things hot and cold, raw, boiled, fried, and at all times and hours, from early morn often until the midnight hour, we cannot wonder that it will fail at times to do the work placed upon it.

We are told that Samson, with the jaw-bone of an ass, slew a thousand men, but we think that the hot biscuit and frying pan have slain their tens of thousands.

Among the causes affecting the digestion may be mentioned predisposing and exciting causes. Everything which causes depressed vitality is a predisposing cause to indigestion. It may be caused by hot and debilitating climate, changes in the elementary constituents of the blood, exhausting diseases, mental and moral emotions act as predisposing causes. Age, also, in the extremes of old age and infancy. Anæmia, and deficiency of the gastric juice, are also predisposing causes. The immediate exciting causes are errors in diet, excessive eating and drinking. The use of unwholesome food and such as is not properly prepared. Too frequent introduction of food into the stomach without giving the organ sufficient time for rest, acts as an exciting cause. Also irregularity in eating, and rapid eating, the food not being thoroughly masticated.

In treating these cases all these things must be considered and overcome to effect a cure. In the following reported cases, which have been under my care during the past year, I have adopted a somewhat routine line of treatment, but one that has proven very beneficial, and therefore I report them at this time.

Case 1.—Miss H., single, æt. 35 years. I was called to see the patient October 3, 1887. She gave me the following history. She had been suffering for months with severe pain in the stomach, and severe vomiting, often unable to sleep at night on account of the pain. She had lost a good deal of flesh, and was unable to sit up all day. Could eat no solid food without having pain and distress. There was marked tenderness over the epigastrium. The patient very despondent and apprehensive of cancer. Had used various remedies without receiving benefit. Or-

dered glass of hot water to be taken one hour before each meal, and pill consisting of arsenious acid $\frac{1}{6}$ grain, extract nux vomica $\frac{1}{2}$ grain, belladonna $\frac{1}{4}$ grain, reduced iron 1 grain, to be taken after each meal. Blister, size of silver dollar, over the epigastrium, and powder of ingluvin 10 grains, before each meal. Diet, milk, some beef essence, boiled rice. October 6. Patient improving, less pain after eating, sleeps better at night. Ordered bismuth subnit. 4 grains, pulv. pepsin 4 grains, pulv. ipecac grain $\frac{1}{2}$, before each meal, in place of ingluvin. The pills and hot water continued, October 10. Patient still improving. Bowels costive. Ordered fld, ext. cascara sag. 20 to 30 drops at night. I increased diet, giving stale, light bread, crackers, soft boiled egg. Patient able to get out of doors when pleasant. From this date she steadily improved, until she fully regained her strength and was able to take regular diet, her friends telling her she had not looked so well for years, and she still continues to keep well.

Case 2.—Judge C., æt. 71. Called to see the patient April 22, 1888. Gave following history: He had suffered from chronic bronchial trouble for years, and has been spending the winters in Georgia and Florida. He had just come from Florida and was suffering with severe cough, just recovering from an acute attack of bronchitis. His stomach was very tender on pressure, and he was unable to take food without pain and distress, and nausea. Ordered quieting mixture for the cough. Glass of hot water one hour before each meal, with elix. lactopeptine after each meal, and small blister over the epigastrium. Diet: milk, beef essence, crackers, and stale bread. Patient improved rapidly under this treatment, the hot water having a very beneficial effect on his stomach. In about ten days he was able to take regular diet with appetite and without distress.

Case 3.—Miss B., æt. 40. Called to see patient July 1, 1888. She gave following history: For several weeks had been suffering with severe pain and distress on taking food, and with severe choking spells. Complaints of burning and boring pains in the stomach, and tenderness on pressure. Much emaciated, unable to sleep, pale and nervous, anæmic and despondent. Had been under treatment, but received no benefit. Ordered glass of hot water one hour before each meal, small blister over the epigastrium, and powder of bismuth and pepsin, 5 grains each, after meals; aromat. spts. of ammonia, Hoffman's anodyne, and spts. lavender Co., for choking spells. Diet: milk and lime water, stale bread and some chicken broth. July 9th. Patient improving, but still complains of pain in the stomach, but not so constant. Ordered powder of $\frac{1}{2}$ gr. calomel, $\frac{1}{2}$ gr. morph. sulph., 5 grains bismuth subnit., after each meal. Patient improved steadily on this treatment with the hot water; increased diet, giving soft boiled

eggs, soft boiled rice, tea, soda crackers, July 31, 1888. Patient gaining in strength and color and flesh, has very little pain after eating. Ordered pill of $\frac{1}{30}$ grain arsenious acid, $\frac{1}{2}$ grain ext. nux vomica, and 1 grain each of quinine and reduced iron, after each meal. From this date patient steadily improved, and returned to her regular diet, and had no further trouble.

Case 4.—Mrs. M., colored, æt. 35. I was consulted by patient July 31, 1888. She gave the following history: Had been for weeks suffering with severe pain in stomach and left side; unable to take food without pain. Had been under treatment, but received no benefit. Ordered glass of hot water one hour before each meal, fly blister over stomach, powder of bismuth and pepsin, 4 grains each, after meals. Diet: milk and lime water, stale bread, and soft boiled rice. Patient improved rapidly on this line of treatment. August 9th. Patient able to take food without pain or distress. Ordered mixture of nux vomica, bismuth and carbolic acid, after each meal, and from this time she has had no further need of treatment.

Case 5.—Mr. A., æt. 35, married. Called to see patient November 29, 1888. He gave the following history: For about one year had been suffering from severe attacks of pain in stomach and bowels, which unfitted him from attending to his business, and frequently prevented sleep. Had lost considerable flesh and was very despondent. Had been under various lines of treatment, but received no permanent relief. His skin was sallow, tongue coated with white fur, bowels costive, tenderness over the epigastrium and liver. Ordered glass of hot water one hour before each meal, small blister over the epigastrium, mild laxative for constipation, and mixture of acid nitro hydrochl., dil., 3iss, syr. sarsaparilla co. ʒij; one teaspoonful to be taken after each meal. Diet: milk and lime water, beef essence, stale bread and soft boiled rice. On this line of treatment patient continued to improve and was relieved of pain and distress, gradually became able to take fuller diet, and gained in strength and flesh. April 1, 1889. The patient has been at work during the winter, has gained 15 pounds in flesh and able to take his regular meals without trouble, but still using the hot water once a day and the nitro. hydchl. pil. occasionally.

From the results obtained in these cases, with others not reported, I have been led to feel that in hot water, properly used, we have a very beneficial agent in all catarrhal conditions of the stomach, and one that is generally grateful to the patient. I have also found the use of small fly blister over the stomach to aid in relieving nausea and pain and tenderness, and think that these means, together with proper regulation of diet, will be successful in relieving many of these distressing and troublesome disorders of the stomach, which are functional.

UNCOMPLETED NEPHRECTOMY.

CALCAREOUS VESSEL MISTAKEN FOR A CALCULUS BY THE NEEDLE TEST—OPERATION ABANDONED ON ACCOUNT OF ADHESIONS—DEATH—AUTOPSY—PRIMARY ENCEPHALOID OF THE KIDNEY.

Read at the Regular Meeting of the Philadelphia County Medical Society, March 27, 1889.

BY W. W. KEEN, M.D.,

PROFESSOR OF SURGERY IN THE WOMAN'S MEDICAL COLLEGE OF PHILADELPHIA.

G. M. C., æt. 68, weight 164 pounds, 6 feet 2 inches tall, was sent to me through the kindness of Dr. E. W. Watson, on October 31, 1888, with the following history:

On April 6, 1886, he had an attack of retention of urine. Violent expulsive efforts forced out a clot. The bleeding continued two or three days. With this he had pain in the right lumbar region. A month later another similar attack occurred, the pain on this occasion being quite severe and amounting to a distinct renal colic. Other attacks, always accompanied by pain and bleeding, occurred in July, 1886, and in January, September and November, 1887. After the last one, for several weeks he had repeated and nearly continuous hæmaturia with a sensation of heat in the right lumbar region, and he lost strength and appetite.

January 14, 1888, he was taken extremely ill with pleuro-pneumonia and septicæmia. Both legs were attacked with phlegmasia. The dullness in the right kidney, Dr. Watson stated, was increased, but no pus was found in the urine either then or at any other time; neither were any symptoms located in the bladder. This illness lasted about two months.

In May and June of 1888 he again had attacks of hæmaturia, and from September 17 to October 31, 1888, he has had nine attacks, passing as much as six or eight ounces of blood, he thinks, in some of the attacks. He has never passed any calculus. In the interval between the attacks the urine was clear. No cause can be assigned for the attacks; not uncommonly they have come on while he was lying in bed. He states that the right kidney is now the seat of marked aching pain.

Present condition.—He is a very tall man with a disproportionately long chest; from the ribs to the crest of the ilium the space is barely two fingers in breadth. The bladder was sounded but no stone was found. Its walls were rugose. The prostate not much, if at all, enlarged. Renal dullness on the two sides equal and normal. Right kidney tender. Two specimens of urine were furnished, one with a large bloody sediment, but without clots, and the other clear and acid, sp. gr. 1022; very slight amount of albumin. Microscopic examination showed no crystalline elements, a few blood discs, granular matter, and a large number of bright fatty-like small globules. Dr. Watson informed me that he had never

found any albumin except just after the attacks of hæmaturia, nor has he ever seen any cast.

It was decided to explore the right kidney, either for stone or possibly for cancer, and either to remove the stone or the kidney, as might seem best.

Operation, Nov. 3, 1888.—Present, Drs. E. W. Watson, A. W. Watson, W. J. Taylor, and T. R. Neilson. An oblique incision, four inches in length, was made just to the right of the erector spinæ, and the perinephritic fat was reached. Surrounding the kidney was a capsule so loose and distinct that it required a very careful examination to be sure that it was not the wall of the colon. The lower end of the kidney appeared normal. The finger detected a rather sharp irregularity deep in the substance of the kidney. The moment it was pressed on, both Drs. Taylor and Neilson, as well as myself, were convinced that it was a stone. A needle was then passed into the kidney, and the point of it grated with great distinctness against the supposed stone. The kidney was now seized with a volsella, and was loosened from the surrounding tissues in order to obtain freer access to it. This was followed by two results: First, very abundant, indeed very alarming hæmorrhage, from large veins that were so concealed under the last rib that they were seized with great difficulty, even after the rib was well raised, and when seized they were so friable that the ligatures would not hold.

The second result of this operation was to disclose the fact that while the small portion of the kidney first discovered was normal, the rest of it was irregular, nodular, and friable, and evidently the seat of a malignant growth. Accordingly, I determined to remove the kidney, if possible. It was rapidly detached from its capsule by the finger, but it was so anchored internally at the hilum that it could not be brought to the surface, in spite of the fact that I got my entire hand into the cavity of the capsule.

Having proved the impossibility of removing the kidney by the loin, I debated the question of attempting it by an anterior incision, but as the difficulty of removal was not the size of the kidney, but the adhesions at the hilum, I concluded not to attempt an operation by this route, as I felt convinced it would result in the patient's dying upon the table. The hæmorrhage had been exceedingly profuse, not from any one particular vessel, or from rupture of the vessels of the hilum, but from every point in the kidney and in the capsule the moment they were separated. This hæmorrhage was checked by thoroughly packing the wound with sublimate gauze. The patient was put to bed. He became conscious and recognized his family, but died from exhaustion three and a half hours after the operation.

Autopsy, twenty hours after death. In order

to determine whether I could have removed the kidney more readily by the anterior incision, I made this attempt as the first step in the autopsy. An incision was made in the right linea semi-lunaris. This incision measured four inches in length, extending from the border of the ribs to Poupart's ligament. No more room, therefore, was obtained for the removal of the kidney anteriorly than posteriorly. The ribs projected so far downward that, in order to reach the kidney, it was necessary to insert my entire hand up to the wrist. The kidney lay far up under cover of the ribs, and was as inaccessible from the front as from the back. It was so thoroughly anchored in its position that to loosen it from its bed required force that would have been wholly unjustifiable during an operation, and would have resulted in rupture of the vessels and in immediately fatal hæmorrhage. It would not have been possible to reach and tie the vessels in such an inaccessible position. When removed, the kidney was found to be enlarged, nodular, and distinctly cancerous. The left kidney and other abdominal viscera were normal.

On section of the kidney there were discovered some calcareous vessels and one or two points of calcification of the other tissues. The kidney measured seven and a quarter inches in length, four and three-quarter inches in width, and three and one-quarter inches in thickness.

Microscopical examination by Dr. J. P. Crozer Griffith showed that it was an intermediate form between scirrhous and encephaloid, with a decided preponderance in the greater part of the organ of the latter form of the disease.

REMARKS—*First, diagnosis*.—This lay most likely between stone in the kidney and cancer of the kidney. Although it seemed unlikely that stone should exist without producing pyelitis and, therefore, showing some pus in the urine, yet I have known of more than one case of both stone in the bladder and in the kidney in which the urine contained no pus. The repeated hæmaturia looked very much toward malignant disease, but the kidney was so under shelter of the ribs that it was impossible to detect any tumor, and the dulness was not markedly increased. The enlargement of the kidney was chiefly toward the hilum, and so the dulness posteriorly was little greater than normal. Mr. Henry Morris states that of thirty cases of cancer of the kidney, found in 2,610 autopsies, twenty-five were secondary and only five were primary. The present specimen is undoubtedly a primary malignant tumor, and is, therefore, a rare form of disease.

Secondly, the surgical aspect of the case.—In this there are two points of interest: First, the needle test for stone. When the kidney was exposed to view, the only healthy portion of it remaining was first seen. Deep under this an irregular, hard mass could be felt, which might easily be a

stone. Puncture by the needle convinced us that it was such. Examination of the kidney after death showed us that no stone existed, but that what was felt by the point of the needle was either a calcareous vessel or a calcareous degenerative mass against which the point of the needle grated. It gave precisely the same sensation as a stone would have done. This possible error seems to me very unusual. I have never seen it noticed, although it may have escaped my knowledge.

Secondly, the advantages of the lumbar or of the abdominal route for removal. As the operation was undertaken primarily for exploration, and no tumor in any sense was discovered, I am clearly of opinion that the lumbar route was the proper one to select. The attempt made at the autopsy shows that the kidney could not have been removed any more readily by the abdominal than by the lumbar incision. The peculiar situation of the mass in question, and the low position of the ribs, resulted in the curious fact that while the space between the last rib and the crest of the ilium was only two fingers in breadth, yet the oblique incision here of four inches was long enough for removal, and it could have been still further prolonged anteriorly if necessary; whereas, the vertical incision from the rib to Poupart's ligament was absolutely limited to four inches, and the kidney was certainly no more accessible by this route than by the other. The removal of the kidney was practically impossible by either method. The inflammatory attachments—especially around the hilum and the great vessels of the kidney—required an amount of force that would have been unjustifiable during life.

ical treatment from quacks as well as regulars, but steadily grown worse. He solicited an operation. I examined some of his blood taken from his gums, and could detect no want of proper relation existing between the white and red corpuscles.

I made a careful surgical survey of his case. Found the tumor an enlarged spleen, the hilum of which could be felt as a notch 1 inch to the right and below the umbilicus. His skin was tawny but natural in color. His urine was normal. His stools were infrequent, very hard and dry. His heart and respiration normal, so far as physical signs were able to detect their functions. The lymphatics were not enlarged.

The tumor was immovable, adherent apparently to the abdominal parietes beneath the ribs and along the left side. He said his strength was steadily failing, that he could not breathe much longer unless the tumor was taken away. I determined to operate. I had little hope of removing the spleen, so firm were its adhesions, but I hoped to bring about its atrophy by starving it. In the presence of the students of the Michigan College of Medicine and Surgery, and a number of professional friends, I opened the abdomen in the linea alba. The wound oozed freely, but hot water sponging checked it. The omentum was found very adherent. The spleen was adherent to a part of the intestine, omentum and abdominal wall. Carefully I made my way to the hilum of the spleen and, isolating two branches of the splenic artery as they entered the organ, ligated them with carbolized silk. Some hæmorrhage ensued, but hot sponges checked it. The abdominal wound was closed and dressed antiseptically. The patient suffered greatly from shock, but rallied after about twelve hours. Twenty-four hours after the operation he began to vomit and his temperature rose to 104°, with small pulse. Vomiting soon became severe, and collapse, preceded by acute peritonitis, closed the scene forty-eight hours after the operation. No autopsy was permitted, but the tumor shrunk remarkably as a result of the ligation of the arteries. I was led to perform this operation as a result of a series of surgical studies of the consequences of ligation of the splenic artery and its branches in dogs. Ligation of the common splenic artery of the dog was followed by death, and the autopsy showed an acute necrosis of the spleen. Ligation of two branches of the artery which supply blood to about one-third of the spleen caused, in most instances, a progressive atrophy of that part of the spleen deprived of its arterial blood. The dead spleen pulp, when injected beneath the skin of rabbits, caused death after twenty-four hours with symptoms of acute sepsis, suggesting the idea that the spleen is a place for the physiological metamorphosis of septic materials, and that the organ enlarges after malarial poisoning in the

LIGATION OF SPLENIC ARTERY FOR CURE OF HYPERTROPHY OF SPLEEN.

A Paper read before the Wayne County Medical Society, May 2, 1889.

BY HAL C. WYMAN, M.D.,

PROFESSOR OF PRINCIPLES OF SURGERY, MICHIGAN COLLEGE OF MEDICINE AND SURGERY, DETROIT.

An Italian, æt. 45 years, who had lived in America and the valley of the great lakes for five years, was brought to the Emergency Hospital with a tumor occupying the left abdominal cavity. His history showed that he had had repeated attacks of malarial fever, which had been treated with quinine. Three years ago he first noticed the tumor in the abdomen, and found himself growing weaker than the previous attacks of ague accounted for. For about a year he had been unable to work owing to the shortness of breath caused by the pressure of the tumor on the diaphragm. He had been constantly under medical care. Had had mercurial and iodine ointments rubbed over the tumor, had taken med-

endeavor to perform its functions. The other ductless glands may assist in this labor, and be able to perform the functions of the spleen when that organ is overworked or has been removed from the system.

REPORTS FROM HOSPITALS.

SURGICAL CLINICS AT THE WESTERN PENNSYLVANIA HOSPITAL BEFORE THE STUDENTS OF THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

BY PROFESSOR J. B. MURDOCH,

SURGEON TO THE WESTERN PENNSYLVANIA HOSPITAL AND PROFESSOR OF CLINICAL SURGERY IN THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

[Reported by WILL. N. PRINGLE, M.D., a member of the Graduating Class.]

December 8, 1888.

OPERATION ON A CRUSHED HAND.

The case which we will show you first to-day is one of those very frequent accidents that we see, namely, a railroad crush. This young man was following his occupation as a railroad brakeman, last Sunday, six days ago, when he had his hand crushed in the terrible manner which you see. He was brought here, but he stoutly objected to an amputation, and his father, who was with him, also refused to give his consent to an operation. He has, however, seen the error of his way, and now wants an operation done, and an operation that should have been done six days ago will be done now.

Amputations are divided into three periods in regard to the time of their performance, namely: the primary, the secondary, and the intermediate. In cases where a limb is hopelessly lost, all authorities now agree that the sooner it is removed the better. In these cases, in this institution, we operate at once, just as soon as the patient comes under our care; provided, of course, that he is not in profound shock, and not actually dying. And, by carefully examining the statistics of the hospital for the last twenty years, we find that the mortality is wonderfully decreased by so doing. And just here let me say, that the comparison of the records of other hospitals with the records of this hospital shows that more amputations are done here, than are done in any other hospital in the United States; and further, that, according to the number of patients treated, more amputations are done in the Western Pennsylvania Hospital than are done in any other hospital in the world. This statement is the result of careful researches and examination of records and statistics of this and other countries.

Now, in cases of accidents, the question you

will often be called upon to decide will be, "Is amputation required or not?" While we try to practice conservative surgery here, and try to teach you conservative surgery, we desire to teach you that *intelligent* or *practical* conservatism which is such a priceless boon to him who possesses it. To illustrate, you see the middle finger of this crushed hand. Although the bones are not broken, the soft parts are contused and lacerated almost its entire length. One kind of conservatism might save that finger. The man would be compelled to remain in the hospital for six weeks, then carry it in a sling for six months, and at the end of that time have a stiff, crooked, useless member, which would continually interfere with the performance of his duty, and perhaps in one year he would come back that we might remove the unsightly, useless member. This is not the conservatism that we would teach you. A member that is preserved merely to hang to the body of the patient as a useless, unsightly encumbrance, and to interfere continually with the proper performance of his duties, or station in life, does not exhibit the practice of true conservative surgery. I will remove the index and middle fingers of this hand at the metacarpo-phalangeal articulation, and in order to get skin enough to make good flaps, will saw off the head of the metacarpal bones. This will leave the man a reasonably useful hand, because he has his thumb remaining, as well as his fourth and fifth fingers. I think that the loss of a thumb is almost equivalent to the loss of a leg, because the remaining fingers having no opponent, are thereby rendered almost useless also. This hand will be dressed in the usual manner, with antiseptic dressing, and we may bring him before you again.

EXCISION OF THE METATARSAL BONE.

We have another case here which will serve as an example, and a warning in regard to the care of the feet. This old gentleman is an Irishman 65 years old, a daily laborer, and resides in that odorous as well as historic locality known as "The Point," and within a short distance of old Fort Duquesne. He was a gay young man at one time, fond of dancing and of wearing tight shoes; and as a result we see such a deformity of his feet as it is but rarely our privilege to behold. His great toe lies almost transversely across the second and third toes, and these, together with the fourth toe, are all dislocated at their metatarso-phalangeal articulation. The elastic spring of the foot is lost, and he walks on the base of the phalanges, over the site of which bunions have formed, which have become so painful that he can only walk with great pain and difficulty. In buying a shoe, the sole should be at least as wide as that of the foot. It seems that people will subject their feet to more pain and agony, for sweet vanity's sake, than they will any other part of

their bodies. It is no rare thing to see women especially with narrow heels on their shoes, 2 inches high, not under the heel of their foot, but under the middle of their foot, and their toes all cramped down into the point of a narrow shoe, causing corns, bunions, warts and deformities, and not unfrequently dislocating the tendon of the tibialis posticus muscle where it passes behind the malleolus; and not only all of these, but the general health suffers, because they who cannot walk cannot take that exercise so conducive to perfect health.

In recent deformities of this kind, or where the deformity is not great, no operation is required. In these cases Dr. Lewis A. Sayre puts a rubber stall over the toe, and to this attaches a strong piece of elastic rubber, and to this fastens a strip of adhesive plaster. The toe is then brought into line, and the plaster fastened to the heel, thus, through the elastic, keeping up a steady traction on the toe.

Now, we propose to do something to relieve this gay Lothario, and but one choice is left us, namely: excision of the metatarsal bone. There are two ways of doing this, however. One way is to open the joint and excise the head of the bone; the other way is to remove a piece from the shaft of the bone below the joint. I propose to open the joint and excise the head of the bone. There are two incisions that may be made here, a straight or an oval, but, as I think I can expose the head of the bone with considerable ease, I will make a straight incision. After the head of the metatarsal bone is removed and the toe brought into position, the base of the phalanx and the sawn surface of the metatarsal bone will be held in close apposition by wires passed through both bones. I will also excise the head of the second, third and fourth metatarsal bones. By a little attention the foot may now be made to present a reasonably good appearance. It will be retained in as good a position as possible by bandages, and in a few weeks this man will have less distress in walking, although he may still not have a perfect foot.

December 22, 1888.

I will show you first to-day the case in which we excised the head of the metatarsal bones of the first, second and fourth toes, two weeks ago. You remember the great toe lay directly across the ends of the second and third toes, and that the toes were all dislocated at their metatarsophalangeal articulations. You see now that the toes all present a reasonably good appearance, and that the great toe is in a line with the inner border of the foot, as it should be. The original dressing put on this foot was not disturbed till the end of ten days, when it was removed and the condition you see here was presented. There is still a wire suture remaining in the wound, but if the wire does not disturb the man we will not disturb the wire.

OPERATION FOR TUMOR ON THE FACE.

The next case is one of tumor occupying the side of the face, or overlying the parotid gland. This man says that it has been growing for twenty years, but that ten years ago it was removed or partly so, but that it began to grow again, and has continued to increase slowly ever since. You can see the cicatrix where it was opened before. Now, the growths that may occur in this locality are various, as enlarged lymphatic glands, enlarged parotid gland, encysted tumor in the parotid gland—and this latter is what I believe this to be. If this is the case I will not likely be able to remove it whole, as it will likely rupture or tear, and the contents be evacuated. In that case I will make an effort to remove the sac by cutting, dissecting or tearing it out. If I am unable to do this I will simply cut off the outer portion, insert a drainage-tube, and sew it up. In removing tumors it is always well to make a free incision through the skin, in order to give yourself plenty of room, then cut down carefully until you find the capsule and cut through it; however, as I do that in this case, the sac is torn and the contents which consist of a large amount of colored blood plasma. I find that the sac is very intimately attached to the surrounding structures, and that the parotid gland is involved in the mischief. If it were not for the long standing of this growth I would look upon it with suspicion, and as it is I am not satisfied that it is not a malignant growth. We will wash the cavity out with bichloride solution and provide free drainage, and make an effort to convert it into an abscess and prevent its return provided it is not malignant.

It is very unsatisfactory to begin an operation and not be able to finish it. You should never begin an operation with so much determination that you cannot stop, when you find that it is to your patient's detriment that you go any further. This is frequently done by surgeons, especially in laparotomies. They open the abdomen expecting to find a certain tumor, or condition, and failing to find what they expected, they cut, and probe, and search for what they wish to find, until they do irreparable injury to their patients. Always be prepared to end an operation when you find that you can do no more good, however unsatisfactory it may be.

FRACTURE OF THE TIBIA AND FIBULA.

We have here another case, a man with a fracture of the tibia and fibula, at their lower third. You see we have all of the symptoms of fracture here. Now this was done by direct violence (this man was struck with a stone) and is much more dangerous than if it had been done in jumping from a height, or any other indirect violence. It requires a much longer time to heal. We had a man in the wards here last summer, who was struck with a brick, and it was six months before

it healed. In cases like this, where there is so little swelling and tumefaction, it has been our practice to incise the limb in a plaster dressing at once, but it has been my fortune to see a good many cases of delayed union follow this practice, so I am beginning to look on it with suspicion. It may be that a sufficient amount of blood is not sent to the part under a plaster dressing, or that this dressing in some other way interferes with perfect union. I am, therefore, inclined to try the other way for awhile in cases of fractured leg from direct violence, or until the same bad results convinces me that the early dressing in plaster is not in some way responsible for the delayed union. This limb will, therefore, not be dressed in plaster for four or five days more. It is now two days since the accident occurred.

OPERATION FOR INJURY TO THE FOOT.

Another case is that of a boy who six months ago fell from a hay-loft, injuring his foot. The leg and knee soon became swollen, and when the swelling subsided the numerous openings you see appeared over the front part of the leg. These openings have a pouting appearance, peculiar to themselves, and they are called "cloacaes," from their fancied resemblance to the anus of the hen, they always lead down to dead bone. As I pass the probe down I come in contact with dead bone at once. You will also notice another defect in this leg, namely, that it is bowed outward. This is caused by the fact that part of the tibia has been lost through necrosis, and the entire weight coming on the fibula, it has given way, or bent from the pressure, causing the bowing of the leg. Now we propose to cut down on the tibia and remove the necrosed bone, and in order to cause the sole of the foot to set flat on the floor we will fracture the fibula, and allow the fragments to overlap each other to a small extent, thus reducing the length of the fibula to that of the tibia. I will make an incision, clear down on to the bone, then with a periosteum elevator, lift up and preserve the periosteum. You see that the tibia is separated at its epiphysis above the ankle, and with very little force I am able to remove a sequestrum about 8 inches long, and almost a perfect mold of the tibia, except where it has been destroyed by the disease. It is the most perfect specimen of sequestrum that I have ever removed from so small a limb. I will pack the cavity with iodoform gauze, and leave the lower one-third of the wound open for the purpose of drainage. The boy, I think, will have a reasonably good limb, although amputation of the limb was at one time considered necessary.

EXTIRPATION OF AN EYEBALL.

January 5, 1889.

I have a patient to-day for whom I will extir-

pate an eyeball. This, properly, should be done by the ophthalmologist, but as this is an operation which you may all be called upon to perform in your practice, I thought proper to bring the case before you to-day. Besides, if all the accidents to the eyes are given to the oculist, and the gynecologist does all the operations falling within his line, and the genito-urinary specialist is given all cases peculiar to his practice, and all the other specialists get their share, there will be but little left for the general surgeon. I, myself, am a specialist, and my specialty is, as Mr. Wilson once said, the skin, and all it contains. When the eye is hopelessly destroyed it should be removed. Because, in the first place, an artificial eye may be better worn, and in the second place, the inflammation and the pathological changes which are set up, are capable, by sympathetic action, of destroying the sound eye. And although the inflammation may be subdued for the time being, and the useless member allowed to remain, still at any time, and from slight provocation, a new inflammation may be set up and the sound eye be quickly destroyed. This man was struck in the eye by a piece of steel, six years ago, and had his eye destroyed. It did not, however, give him much trouble until within a few days, when a new inflammation attacked it, and which is now slowly invading the other eye. The man has applied to us for relief, and extirpation has been decided upon. In doing this the wire speculum is inserted to hold the lids apart. The conjunctiva is then picked up with a small forcep and cut clear around, near the cornea. The recti muscles are then all divided, as close to the sclerotic as possible, and the eye will then bulge forward. You then use a pair of curved scissors to cut off the optic nerve. Of course, when about to do the operation, you will be careful about the eye you are going to remove. Surgeons have been known to remove the wrong eye. This would be a great mistake. After the recti muscles are all divided you introduce the scissors, closed, and feel for the optic nerve. I prefer to introduce the scissors on the nasal side, as the nerve is nearer that than the other side. When you have found the nerve the scissors are opened sufficiently to grasp the nerve and snip it off, as I do here. After the nerve is divided the oblique muscles still remain, which I will divide close to the sclerotic, when the globe is removed with ease. The eye should, where possible, be removed before the humors are allowed to escape, as it is done with less facility when emptied of its fluid. If there is any bleeding in the wound a little water usually controls it, if not, then a cotton compress held in the socket by a bandage is sufficient to control any hæmorrhage there is likely to be. In about three or four weeks this man can be fitted with an artificial eye. He will for the present be kept quiet and his eye kept bandaged.

AMPUTATION OF THE LEG.

We will next show you a boy for whom I amputated a leg just twenty-four hours ago. There has been some rise of temperature, and some soiling of the dressings, so I will take the dressing down and ascertain, if possible, the cause of this disturbance. As I inserted a rather large drainage tube I will now remove it. I think that by this time the serum is all drained from the wound, so that it will not suffer by the removal of the tube. The wound will then be redressed and not disturbed for two, three, or perhaps for four weeks, unless another rise in temperature should indicate that all is not going on well. A large amount of dressing should be placed over wounds like this, so as to absorb all the fluids that may come from the wound, because the moment that the blood shows itself on the outside of the dressings the danger to septic infection at once begins, as the germs more easily penetrate the dressing. It is for this purpose that we use such large amounts of absorbent cotton. And in regard to bandages let me say here, that the ordinary crinoline bandages are the best for wounds like this. When applied wet they adapt themselves nicely to all inequalities of the surface and when they afterward become dry the sizing which is contained in their meshes acts in a modified degree like the plaster in a plaster dressing, making a firm and altogether very excellent dressing. For fractures where you wish to hold parts in apposition, or where you wish to retain splints, or make pressure, the ordinary unbleached muslin makes better bandages. This wound will now be redressed, antiseptically, much the same as an original wound, with the exception of a drainage-tube, and we anticipate no more trouble from it.

MEDICAL PROGRESS.

ACUTE GENERAL ŒDEMA OF THE LUNGS.—DR. M. GROSSMANN has made a number of experiments supplementary to a work previously published on "Muscarin-Œdema of the Lungs." Recent investigations treat the subject of acute general œdema of the lungs on a broader basis, inasmuch as they touch not only muscarin œdema of the lungs but also the acute general œdema, originating from certain other especially mechanical influences. In reference to this it is proven that in the dog—not in the rabbit only, as was supposed—an acute general œdema of the lungs is produced by obturation of the left auricle and by squeezing the left ventricle.

The investigations furthermore extended to the nature of the difficulty in breathing, hitherto unknown, which appears in a lung overfilled with blood which transudes readily. It is proven that

but secondary importance is to be attributed to the transudation itself, and that the principal obstruction to breathing originates from the rigidity of the lung. The supposition that the capillary ectasy caused by the stopping of the blood produces the obstacle to breathing by diminishing the alveolar space is disproven by the fact that in consequence of the congestion not a diminution but an enlargement of the alveolar space, *i. e.* an enlargement of the lung occurs. The author furthermore mentions experiments which show that transudation artificially produced is not an essential obstacle to breathing, from which he draws the conclusion that no especial significance attaches to transudation as an obstacle to respiration. Supplementary to the theory of muscarin intoxication, his recent experiments show that through this poison not only congestion and œdema but also swelling and rigidity of the lungs and bronchial convulsions are produced.

The author describes the process of acute general œdema of the lungs in this way, that the congestion in the lung, by producing enlargement and rigidity, becomes an obstacle to respiration and causes as a final anatomical result transudation.

The primary cause for congestion of the lungs the author, on the ground of his experiments, finds in a narrowing of space of the left portion of the heart, as opposed to the theory of Cohnheim, Welch, who considered a paralysis of the left side of the heart as the cause of œdema of the lungs.—*Internationale Klinische Rundschau*, 1889, No. 15.

ON THE INFLUENCE OF THE DIFFERENT METHODS OF TREATMENT OF ABDOMINAL TYPHUS IN CHILDREN UPON FLUCTUATIONS OF TEMPERATURE AND BODY-WEIGHT.—DRS. LUMIN O. MEYER, R. PETERS and C. TANNENHÄUSER report a number of cases from the hospital for children of the Prince of Oldenburg, of the years 1875, 76, 77, 84, 85, 86 and 87. Excluded were cases in which the fever lasted only one week, such as originated during the last period, and cases complicated with other diseases. Therapeutic experiments were made—1, with baths of 38° C. to 8 times daily, in temperatures exceeding 30° C.; 2, baths of 33° C. with dashes of 22–18°; 3, 4 to 12 dashes daily; 4, large doses of quinine 0.3 twice or 0.5–1.00 once daily; 5, large doses of quinine simultaneously with antipyrin; 6, antipyrin; 7, quinine an antifebrin; 8, antifebrin; 9, amm. salicylate. To render a comparison possible a series of cases was treated expectatively with acid muriatic. For each individual case the average temperature of 5 to 10 measurements was calculated, and with these figures an ideal curve drawn for each. A comparison of all the curves showed remarkable similarity. All curves descend gradually and in

steps, the temperature reaches its acme on the fourth day, to fall after that, only in the cases observed from the first day of sickness a rapid rise of the temperature was noted in the beginning. The antipyretic methods above mentioned did not alter the temperature curve at all. The weight of the patients was taken from one to seven times a week, the daily loss was figured out in per cent. of the body weight as existing on the day of reception into the hospital; the gain, however, in per cent. of the lowest body weight observed.

Dr. Senetz, of St. Petersburg, declares that the measurement of weight in his cases of abdominal typhus showed that an energetic antipyresis had an effect upon the body weight in so far that its decrease lasted for a longer time, and its increase was slower than with indifferent treatment, that the curve of body weight is one of the most reliable clinical symptoms for judging the course of the disease, and that with an energetic antipyresis the course and convalescence are more protracted; in children from 7 to 8 years old the body weight increases much more quickly and a cure ensues sooner than in adults.—*Internationale Klinische Rundschau*, 1889, No. 15.

RESECTION OF THE ENSIFORM CARTILAGE.—

An important paper has recently been presented to the Royal Academy of Medicine and Surgery of Naples by a young surgeon, DR. RINONAPOLI, of Collamele, in the province of Aquila, giving the details of an operation for resection of the ensiform cartilage. Only one such case has been previously recorded—by Linoli, in 1857. A man was injured by a horse rearing and falling back upon him. His chest was violently compressed, and the ensiform cartilage dislocated backwards. The displaced cartilage, by its pressure on the stomach, was productive of very severe gastric disturbance, which at length became so great that not even the smallest quantity of milk could be taken without terrible pain. The patient rapidly wasted away, and his life was despaired of. Various diagnosis were made, but it was left for Dr. Rinonapoli to discover the true state of affairs. Being convinced of the accuracy of his diagnosis, and fortified by the opinions of two colleagues, Dr. Rinonapoli gained the consent of the patient and his friends to an operation.

The minutest antiseptic precautions (carbolic acid and perchloride of mercury) were observed. An incision six centimetres long was made, the upper third being over the sternum. Dissection was carefully carried down to the peritoneum, which was not opened. The cartilage was separated from the structures enveloping it, and, finally, its attachment to the sternum was divided by passing a probe-pointed bistoury behind and cutting forwards. The wound was carefully cleansed and brought together by sutures. In

the course of five weeks the patient had completely recovered. The points of interest connected with the case are: 1. That it is only the second recorded. 2. The peritoneum was not opened. 3. It was undertaken by a young surgeon in a country district in Italy, who, with the assistance of two other country surgeons, carried it through in the most praiseworthy manner. Dr. Rinonapoli worthily won his admission to the Royal Academy of Medicine of Naples, for which Professor Fusci stood his sponsor.—*Lancet*, March 16, 1889.

ON COCAINE—EPILEPSY.—DR. C. HEIMANN, of Charlottenburg, reports in the *Deutsche Medicinische Wochenschrift*, the case of a patient in whom after long subcutaneous use of large doses of cocaine (up to 8.0 daily), besides cocaine-paranoia (repeatedly observed during the past years by the author and others), epileptic convulsions occurred. They closely resembled the classical symptoms of epilepsy, and were accompanied by disturbances of the sensorium, complete numbness, subsequent failure to remember the attack, etc. After stopping the use of the poison the morbid symptoms, hallucinations, perverse sensations, frenzy, etc., disappeared, and the convulsions ceased but recurred always when large doses of that drug was used. Now since no other causative factor for epilepsy existed in the patient, hereditary influences were missing, and convulsive conditions had never before been known to him, the author concludes that in this case epilepsy was caused by the alkaloid. This conclusion is supported by experiments on animals in which epileptic fits also occurred after cocaine.—*Therapeutische Monatshefte*, 1889, No. 4.

ON THE WASHING OF THE ORGANISM IN INTOXICATIONS.—PROF. SANQUIRICO has shown that the fatal consequences of an acute intoxication produced by various substances can be avoided by means of washing the organism as proposed by him and often tested, and that this antitoxic treatment is often more valuable than all other methods used in cases of poisoning. Prof. Sanquirico now describes a modification of his treatment which experimentally has proven perfectly effective. The modification consists in this, that for the poisoned individual he makes use, on the one hand, of the physiological antagonism of a drug capable of fully exerting the latter, and on the other hand of the depurative effect of the washing. With this combined action—which is variously applied in given cases—the author wants to serve a two-fold purpose:

1. To obtain a cure in animals poisoned by a quantity against which either of the two ways alone would be insufficient.
2. To obtain a success also in those cases of poisoning in which the simple washing as well as

also the action of a powerful antidote proved useless.

A long series of tests made by Prof. Sanquirico have established the undoubted efficiency of the combined treatment in cases of acute poisoning. It might, therefore, also be used to advantage in acute intoxications in man.—*Internationale Klinische Rundschau*, 1889, No. 15.

CHLORIDE OF BARIUM IN HEART DISEASE.—According to *Les Nouveaux Remèdes*, H. A. HAZE prescribed the chloride of barium in seven cases of heart disease (once for an infant 6 years old with lesion of the mitral, once for acute dilatation of the heart, twice for lesions of the aorta and once for lesions of the mitral in an adult, and twice for functional disturbances of the heart). The results obtained were very good. In all cases the drug slackens and regulates the heart-beat, augments the amplitude of the pulsations without producing as pronounced a tension as the finger applied to the artery feels after digitalis. At the same time the pulse is considerably prolonged. No renal troubles. The author administered the drug in a 1 per cent. water solution; 1.50 to 2 gr. of this solution repeated three times daily for children, and 5 gr. two or three times daily for adults. In these doses it may be considered as not toxic. As it is, besides, almost tasteless and inexpensive, and acts as rapidly as digitalis, it is to be supposed that this drug will soon render valuable service in the treatment of heart disease.—*Journal de Médecine de Paris*, 1889, vol. xvi, No. 15.

THE TREATMENT OF ACNE.—DR. ISAAC, assistant to Dr. Lassar's clinic for skin diseases in Berlin, discusses in the *Berliner Klinische Wochenschrift*, No. 3, 1889, acne and its treatment. As an etiological factor in the production of acne, he considers that hereditary peculiarities in the opening of the sebaceous glands may have an influence. In such cases the sebaceous duct is wide and funnel-shaped, offering a nidus for dirt and other septic material. Though such anatomical peculiarities may in exceptional instances predispose to acne, its causes are to be sought for in disturbances of the digestive, circulatory, or of the generative apparatus. The treatment in vogue at Lassar's clinic is the following:

R. Beta naphthol. 10.0.
Sulph. præcipitat. 50.0.
Saponis virid.
Vaseline āā 20.0.

This salve is applied thickly to the affected portion of the skin either by a brush or a spatula, and left *in situ* for from half an hour to an hour. On the following day one notices some desquamation of the epidermis and slight irritation and retraction of the skin. This procedure is repeated every day until desquamation of the entire epider-

mis has taken place. Should much irritation be produced, the treatment may be temporarily stopped and the affected surface covered with an indifferent powder or with Lassar's paste. For especially stubborn cases the following modification of the ointment may be applied:

R. Pulv. cretæ albæ 5.0.
Beta naphthol.
Camphor
Vaseline āā 10.0.
Saponis virid. 15.0.
Sulphur præcipitat. 50.0.

The addition of the camphor increases the irritative power of the ointment, which in this form should only be left on the skin fifteen minutes.

Another formula which has been found serviceable in the treatment of acne is the following:

R. Resorcin
Zinc oxid.
Amyli āā 5.0.
Vaseline. 10.0.

—*Jour. of Cut. and Gen.-Urin. Dis.*, May, 1889.

ON THE INOCULATION OF CARCINOMA UPON ANIMALS.—Although carcinoma is a tumor producing metastases, it has so far been found impossible to inoculate it from men upon animals, or from animals upon animals. Transplantation has been attempted from dogs to dogs, or even to rabbits and guinea-pigs, but these attempts have proven futile. MR. HANAN, of Zurich, succeeded in transferring the carcinoma of a rat affected with papillar cancroide to two animals of the same species. He inoculated these two rats in the tunica vaginalis of the scrotum, which in these animals communicates with the peritoneum. At the end of seven weeks one of the rats died from carcinoma. The entire epiploon was covered with nodosities, some the size of a pea, some smaller. The axillary and inguinal glands were similarly affected. These tumors when examined under the microscope showed the same type of carcinoma as that from which the virus was taken. The autopsy of the second rat was made in the presence of Professor Koch, and disclosed analogous alterations.—*La Semaine Médicale*, No. 18, 1889.

TREATMENT OF OXYURIS VERMICULARIS.—GUBB, *London Med. Record and Allgem. Med. Centralz*, 1889, No. 16, recommends rectal injections of pure cod liver oil or an emulsion of it with eggs, as reliable and not irritating. Grimaud calls attention to the fact that Lallemand (Montpellier) obtained the most reliable results with natural sulphur waters. He (Grimaud) also had opportunity to convince himself that sulphur water is poisonous for intestinal worms. It may be used internally or per clysmā, and the worms will soon disappear without returning.—*Therapeutische Monatshefte*, 1889, No. 4.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JUNE 1, 1889.

SPECIAL NOTICE.

At the moment of going to press a circular has been received calling attention to the "*American Medical Association Annual*," and seeming to represent the Medical Association, soliciting advertisements.

It is proper to state that THE JOURNAL is the only official organ of the Association, and is alone authorized to receive advertisements in its interest.

The Board of Trustees has full control of THE JOURNAL, and as neither the Board, nor its special Committee on Management, nor its editor has any knowledge on this subject, we are at a loss to know upon what authority such solicitations are made.

It is certainly not the purpose of the Association to be related to advertisers in any other manner, than through its official organ—THE JOURNAL.

DEVENTER'S METHOD OF DELIVERY OF THE
AFTER-COMING HEAD.

The utterances of DR. JOHN BARTLETT upon obstetrical topics always deserve and commonly receive close attention. It is the purpose of this note to discuss briefly his last contribution to the art of midwifery, "A Study of Deventer's Method of Delivering of the After-Coming Head."¹

As interpreted by Dr. Bartlett, Deventer's plan differs in essential points from the procedure in vogue, known as the Smellie-Veit method. The posture of the woman is identical with that commonly assumed at the present day—dorsal decubitus, hips elevated. As soon as the child has passed so far as the base of the thorax, extractive efforts are to be made, in a direction downward and a little backward. When the arms are within reach an examination of their relation to the head should be made. Should their position be favorable, that is, on either side of the head, resting anteriorly to the parietal protuberances, delivery may be at once proceeded with. But if the position be unfavorable it should be corrected, either by adjusting the arm to its proper site, or, in the event of that being impracticable, as in case the extremity were in front of the forehead, or behind the occiput, by bringing it down in accordance with established rules. From the moment that the head enters the pelvis the woman must be earnestly called upon to second the efforts of the accoucheur by bearing down with all her power. After the arrest of the chin at the pelvic floor, pressure should be made over the occipital end of the head as nearly behind the anterior wall of the pelvis as practicable, with the view of causing descent of the occiput, and a relieving extension of the head. In a typical case, the occiput appears under the pelvic arch, and the delivery is accomplished with the chin in forced extension, instead of flexion, while the arms are extended along the sides of the head.

The "particular advantages" of Deventer's plan over the Smellie-Veit method, according to Dr. Bartlett, are:

1. What Barnes might call the decomposition of the wedge of the shoulders; in lieu of the bis-acromial diameter presenting at the superior strait, it is the bis-axillary diameter.

2. The arms extended upon the head bridge over the space between it and the body; thus extended they (a) act as fenders for the cord, keeping open channels through which the funis may pass uncompressed; (b) they antagonize that spastic contraction of the uterus which, closing in upon the lower circumference of the after-coming head, is one of the causes of fatal delay in delivery in these cases.

¹"A Study of Deventer's Method of Delivering of the After-Coming Head." Transactions of the International Medical Congress. Ninth Session. Vol. II, p. 438.

3. By this method the delivery of the after-coming head is very greatly simplified. In the majority of instances it may be unnecessary to interfere with the attitude of the head; Deventer claims that, with few exceptions, the head will "shoot through" both straits easily.

4. The delivery by extension is very much more expeditious than the ordinary method. Precious time is not lost in bringing down the arms, inserting the fingers in the child's mouth, etc. As a consequence, if the experience of Deventer is to be relied upon, it would seem to be safer for the mother, and very much safer for the child, than other methods.

Adequate evidence from clinical observation to support these propositions is not supplied by Dr. Bartlett in this essay. They are conclusions drawn purely from *à priori* considerations and from Deventer's alleged successful treatment of artificial breech presentations.

Dr. J. H. Chew,² of Chicago, has written an excellent history of one case of delivery by Deventer's method. As at present informed, this single case constitutes the only example of the procedure in practice that has been recorded within recent years. Charles T. Parkes, of Chicago, George Wheeler Jones, of Danville, Ill., Frank L. Wadsworth, of Chicago, and others, have indeed cited cases in which the method was successfully employed, but, in the absence of exact accounts of the conditions and indications present in such cases, the testimony of these gentlemen cannot be accepted as competent.

In this connection, it may be remarked that Dr. Bartlett's citation of Zweifel's statistics of version is not pertinent. Dr. Bartlett writes: "According to statistics presented by Zweifel, in 3,475 versions the mortality was 58.9 per cent. Says Deventer: 'If this operation of version and extraction of infants be cautiously and skillfully managed, the infant is not exposed to the danger of death.'" Upon the one hand, Zweifel's statistics, as a reading of the context shows, are drawn from cases in which internal version was performed under all possible indications. In many cases, the infants were dead before the operation was performed. They relate to the prognosis of version, not to the prognosis of extrac-

tion. Upon the other hand, no practitioner will accept Deventer's dictum that if his operation of version and extraction be cautiously and skillfully managed, the infant is not exposed to the danger of death. Experience teaches that in version and extraction, no matter how favorable the conditions may be, there is always grave danger of death of the infant.

This misuse of statistics may be allowed to pass as a rhetorical subterfuge—as an example of antithesis—but its bearing on the question under discussion must be absolutely rejected.

The fourth and third propositions, formulated by Dr. Bartlett, cannot be sustained. Note that the propositions are universal, that they include all cases. Now it is an obstetrical axiom, from which no man can withhold assent, that that procedure in these cases is safest for both mother and child that imitate most closely the natural mechanism of labor. The natural mechanism constitutes the most advantageous mode of delivery both with reference to the mother and the child. Neither will any one venture to deny that the natural mechanism of labor is most closely simulated by the Smellie-Veit method. The conclusion is obvious.

The Smellie-Veit method of manual aid, originally proposed by Mauriceau, in 1668, and modified by Lachapelle in 1821, consists first in the liberation of the arms, and secondly in the delivery of the head by flexion of the chin upon the sternum by the finger passed through the mouth to the lower jaw, and by traction applied chiefly to the shoulder through the fingers that fork-like are placed on either side of the neck.

In normal cases of natural or artificial breech presentation—these are included in Dr. Bartlett's proposition—the practice of Deventer's method means as forcibly remarked by Dr. Knox,⁴ the production of a malposition and then a hunt for a new method to escape from the difficulty. The second proposition seems too fanciful to analyze critically, while the first is manifestly untrue.

Deventer's method doubtless has its place, and under certain conditions may even come to be the operation of election. Thus Smellie points out cases of dystocia in which the procedure may be useful. He writes: "When the forehead is hindered from coming down into the lower part of the sacrum by an uncommon shape of the head

² Transactions of the Chicago Medical Society, December 27, 1888. Supplement to Western Medical Reporter, February, 1889, p. 15.
³ Lehrbuch d. Geburtshilfe Stuttgart, 1887. Page 612.

⁴ Transactions of Chicago Medical Society, loc. cit.

or pelvis, and we cannot extract it by bringing it out with a half-round turn at the os pubis; we must try Deventer's turn in the contrary direction."

ILLINOIS STATE MEDICAL SOCIETY.

The thirty-ninth Annual Meeting of this Society was held in Jacksonville, Ill., May 21, 22 and 23, 1889, and was attended by about 200 members. The season was pleasant, the city beautiful, the accommodations provided by the Committee of Arrangements convenient, and the members engaged harmoniously in the legitimate work of the Society. Reports and papers of interest pertaining to almost every department of the science and art of medicine were read and discussed with profit and with much less waste of time than usual. The meeting was called to order at 10 A.M. Tuesday by the President, Dr. C. W. Earle, of Chicago. In the absence of the Mayor, a brief and appropriate address of welcome was delivered by City Attorney Yates, and was responded to in behalf of the Society by Dr. N. S. Davis, of Chicago. In the evening the members of the Society and a large audience of citizens assembled in the Presbyterian Church to hear the President's Annual Address, and also a most interesting musical and literary entertainment by the pupils of the Illinois Institution for the Education of the Blind. Dr. C. W. Earle, the President, has been the attending physician of the Washingtonian Home of Chicago for many years, and thereby brought in close contact with many thousand inebriates; and his address, which was on the subject of "Inebriety and the Responsibility of Physicians in prescribing Alcoholic Remedies in the Treatment of Disease," was listened to with marked attention. He combated vigorously the doctrine that drunkenness was the result of a primary disease of the brain and nervous system, called *inebriety*, or in any considerable degree derived from hereditary influence. He claimed that three-fourths of those addicted to the use of alcoholic drinks were fully able to reform whenever they choose to make a judicious and earnest effort to do so. He admitted, however, that in one-fourth or perhaps less, the long continued use of alcohol had produced such structural changes as to render them incapable of self-control, and for such the State should provide suitable asylums and legal restraint on

the same principles that guide in the control of the insane.

The attention of the Society had been chiefly occupied during the day with the important subjects of Pneumonia and Diphtheria, they being presented both in the report of Dr. C. F. Robinson, of Wyand, Chairman of the Committee on Practical Medicine, and a paper by Dr. J. A. Baxter, of Astoria, and by Dr. Geo. N. Kreider, of Springfield, in a paper on "Tepid Baths in the Treatment of Pneumonia." These papers and the discussions elicited by them, developed the important fact that in many parts of the State pneumonia had been more prevalent than usual during the months of February, March and April of the present year.

The Society was fully occupied with reports and papers on diseases of children, gynecology and obstetrics during the second day, and was entertained by a complimentary concert given by members of the Faculty of the Illinois Conservatory of Music of Jacksonville, in the evening. On the third day work was commenced at 8:30 A.M. and continued until near 2 P.M., after which the members were taken to the Hospital for the Insane. During the session, the time was occupied closely and profitably in considering the report of the Committee on Surgery, and volunteer papers by Drs. E. Andrews and A. E. Hoadley, of Chicago, and Dr. David Prince, of Jacksonville, and the report of the Committee on Ophthalmology and Otology by Dr. H. M. Starkey, of Chicago, and Dr. A. E. Prince, of Jacksonville.

Throughout the three days' sessions it was generally conceded that the Illinois State Medical Society had enjoyed no more pleasant or profitable meeting during its past history, than the one we have thus briefly outlined.

WAS IT A DECOY OR SILLY "CATCH," OR A REAL ATTEMPT TO GAIN POSSESSION OF A DIPLOMA, IN DUE FORM, UNDER THE PRETENSE OF HAVING IT CONFERRED UPON A "FRIEND?"

The following letter, dated Boston, Mass., April 12, 1889, was addressed to the Dean of the Medical Department of a University located east of the Alleghany Mountains, and by him forwarded to us:

"Dear Sir:—I take the liberty of writing you a confidential letter suggesting we exchange college honors. I

have the honor to be Dean of the Medical Department of a University in New England. If you will confer the degree of M.D., upon a friend of mine who is now a graduate in medicine, I will ask the Board of Trustees of the above-mentioned University to confer upon you, or one of your colleagues, the honorary degree of A.M. or LL.D., just as the person is qualified to receive. Hoping you will give this matter your immediate attention and forward an early reply, I am very truly,

"DR. P. RIPLEY.

"An envelope was enclosed for the reply directed to 'Dr. P. Ripley, 71 Cornhill, Boston, Mass.'"

Having a reliable correspondent in Boston, he was requested to inform us who Dr. P. Ripley was, and of what "Medical Department of a University in New England" he was Dean? In due time he replied saying that he did not find Dr. P. Ripley's name in either the last city directory or the last New England Medical Register; and further that "71 Cornhill" was the waiting-room of the Horse Railway Company, with no one there who knew of any such person as "Dr. P. Ripley." Whether the letter was intended for a *hoax* or a fraudulent attempt to obtain a diploma, it was equally disgraceful to its author.

EDITORIAL NOTES.

DR. CHAS. T. REBER died at his home, near Fancher, Ill., on the night of May 10, 1889, aged 53 years, 3 months and 22 days. He was a member of the American Medical Association. Was a surgeon of the 48th regiment Pennsylvania volunteers during the late war. He was a close student and a conscientious practitioner.

THE PROPOSED MEMORIAL TO THE LATE PROF. MOSES GUNN.—The Alumni and Faculty of Rush Medical College, Chicago, have been for some time engaged in the effort to raise by subscription a fund for the purpose of erecting in the college building a bronze to serve as a memorial of the late Professor Moses Gunn. Those purposing to contribute to the fund are reminded that their subscriptions cannot be received after the 15th of June. Sums varying from one to ten dollars can be sent to the College Clerk, Mr. F. J. Gould.

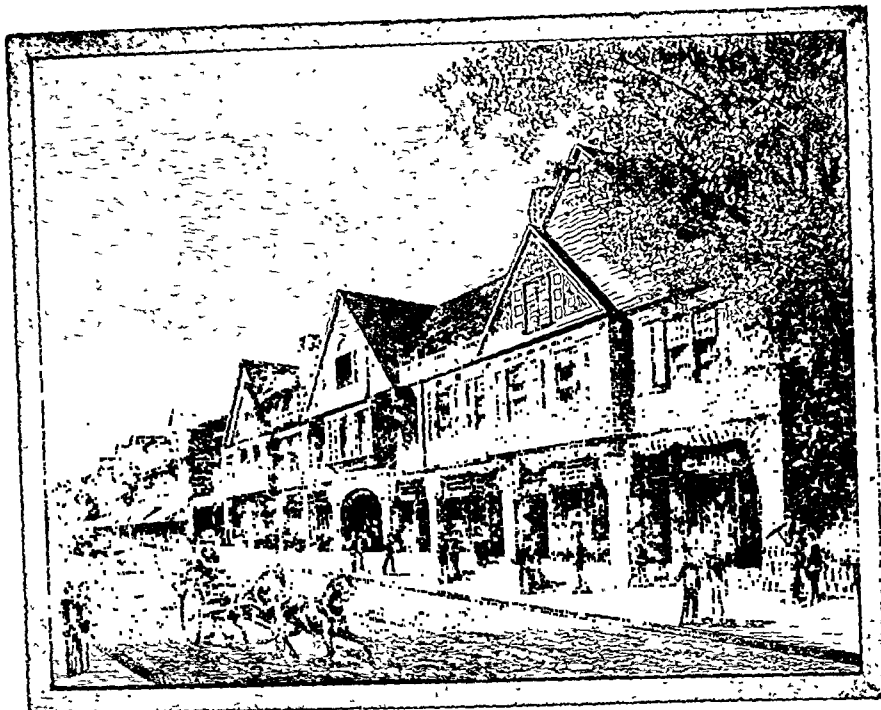
THE NEXT ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY will be held in Chicago on the third Tuesday in May, 1890. The following are the officers for the ensuing year: President, Dr. John Wright, of Clinton; First Vice-President, Dr. J. P. Matthews, of Carlinville;

Second Vice-President, Dr. T. M. Cullimore, of Jacksonville; Permanent Secretary, Dr. D. W. Graham, of Chicago; Assistant Secretary, Dr. L. Ware, of Chicago; Treasurer, Dr. Thomas McIlvaine, of Peoria.

DR. H. ISAAC JONES, who has been an active practitioner in Scranton, Pa., for fifteen years past, has changed his residence to 118 Grant Ave., San Francisco, Cal.

SURGERY AT THE INTERCOLONIAL CONGRESS.

—The special correspondent of the *British Medical Journal*, in reporting the proceedings of the Surgical Section of the Intercolonial Medical Congress of Australasia, recently held at Melbourne, says: Mr. T. N. Fitzgerald, the President of the Congress, delivered the opening address and dealt with the perennial subject of club-foot, especially talipes equino-varus. He has added yet another to the many methods of treatment before us. After subcutaneous division of all tendons and resisting fascial bands, Mr. Fitzgerald introduces a chisel through a valved opening in the skin, and cuts through the neck of the astragalus and the greater process of the os calcis; he then wrenches the foot into position, overcoming any further resistance by "guarded powerful blows" of a mallet. All this is done upon a bloodless limb, and the part is firmly bandaged before Esmarch's cord is removed. Mr. Fitzgerald is able to report that "within a month the patient learns to walk upon his practically new feet." If other surgeons can achieve equally good results, this contribution to surgery is indeed a valuable one. It has distinct advantages over tarsectomy and the excision of bones; but, like these operations, it fails to deal with the faulty position of the os calcis beneath the astragalus. The treatment of hydatids naturally came up, and was exhaustively dealt with by Dr. Davies Thomas, of Adelaide. Dr. Thomas regards the tapping of cysts as both dangerous and ineffectual, and his tables show a mortality of 18.88 from the operation. Evidently more investigation upon this point is needed, for Victorian surgeons—as we are informed—find tapping and aspiration to be in most cases quite sufficient. Twenty successful cases of subrapubic lithotomy, by Mr. O'Hara, form no mean contribution to the subject; and Dr. Tremearne introduced an ingenious method of draining the bladder, which is capable of many applications.



THE CASINO.

Where the Sessions of the Association will be held.

American Medical Association

LIST OF OFFICERS AND PROGRAMME OF THE FORTIETH ANNUAL MEETING.

TO BE HELD AT NEWPORT, R. I., JUNE 25, 26, 27 AND 28, 1889.

GENERAL OFFICERS:

President—W. W. DAWSON, M.D., Cincinnati, Ohio.

Vice-Presidents—W. L. SCHENK, M.D., of Kansas; FRANK WOODBURY, M.D., of Pennsylvania;
H. O. WALKER, M.D., of Michigan; J. W. BAILEY, M.D., of Georgia.

Treasurer—RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Pa.

Permanent Secretary—WM. B. ATKINSON, M.D., 1400 Pine Street, Philadelphia, Pa.

Local Secretary—VALENTINE MATT FRANCIS, M.D., New York.

Librarian—C. H. A. KLEINSCHMIDT, M.D., Washington, D. C.

Chairman Committee of Arrangements—H. R. STORER, M.D., Newport.

The General Sessions will be held at the Music Hall, Bellevue Avenue, adjoining the Ocean House, and those of the Sections at the Newport Casino, also immediately contiguous, which for the first time in its history, and as an act of courtesy, is permitted by its Governors to be occupied for other than the purpose for which it was built.

PROGRAMME OF GENERAL SESSIONS.

FIRST DAY, TUESDAY, JUNE 25.

Assemble in Music Hall, Bellevue Avenue, at 11 A.M.

Meeting called to order by Dr. Horatio R. Storer, Chairman Committee of Arrangements.

Prayer. Rev. Thatcher Thayer, D.D. (Cong.), the senior clergyman of Newport.

Reading names of delegates and others thus far registered, by permanent Secretary, Dr. Wm. Atkinson, of Philadelphia.

Announcement of the programme for the day, of halls for the Sections, that papers not already listed be handed to Chairman of Committee of Arrangements for reference to appropriate Sections, that Judicial Council meet at 2 P.M. at Newport Casino, and that, to prevent the usual haste and confusion, the delegates from the different States hold their separate meetings, to elect members of the Nominating Committee, at 9:30 A.M. Wednesday, at the Music Hall, half an hour before the general session.

Address of Welcome by Hon. Thomas Coggeshall, Mayor of Newport; by Dr. Henry E. Turner, of Newport, President of State Board of Health, on behalf of the profession of Newport; and Hon. James H. Eldredge, M.D., of East Greenwich, ex-President of Rhode Island Medical Society, on behalf of the profession of Rhode Island.

Presidential Address, Dr. W. W. Dawson, of Cincinnati, Professor of Surgery in the Medical College of Ohio.

SECOND DAY, WEDNESDAY, JUNE 26.

Meeting called to order by the President of the Association at 10 A.M.

Prayer.

Reading continuation of registry list, of programmes for the day, and call for reports of elections to Nominating Committee.

Address on Medicine, by Dr. Wm. Pepper, of

Philadelphia, Provost of the University of Pennsylvania.

Report of the Trustees of THE JOURNAL.

Consideration of proposed Amendments to the Constitution.

Announcement of Nominating Committee, and that it will report at close of Thursday's general session.

THIRD DAY, THURSDAY, JUNE 27.

Meeting called to order by the President at 10 A.M.

Prayer.

Reading of continuation of registry list, and of programmes for the day, and notice that all new business must be introduced at to-day's session.

Address on Surgery, by Dr. Phineas S. Conner, of Cincinnati.

Introduction of New Business.

Report of Treasurer.

Report of Librarian.

Report of Rush Monument Committee.

Report of Nominating Committee.

FOURTH DAY, FRIDAY, JUNE 28.

Meeting called to order by the President at 9 A.M.

Prayer.

Reading of continuation of Registry list, and of programmes for the day.

Address on State Medicine, by Dr. W. H. Welch, of Baltimore.

Report of Necrologist.

Reading names of newly elected officers of the Sections and Delegates to Foreign Societies.

Introduction of the President-elect by the retiring President.

Response by the former.

Final Adjournment.

PROGRAMME OF SECTIONS.

Section on the Practice of Medicine, Materia Medica, and Physiology.

Chairman—F. C. Shattuck, M.D., Boston.

Secretary—G. A. Fackler, M.D., Cincinnati.

FIRST DAY—JUNE 25.

1. Address of the Chairman.

2. "On the Passage of Portal Blood into the General Circulation, and its Probable Relation to Toxæmia," by Charles G. Stockton, Buffalo, N. Y.

Discussion by William Osler, Baltimore; W. S. Tremaine, U. S. A.; John H. Musser, Philadelphia.

3. "Dioscorea Villosa—Wild Yam," by J. V. Shoemaker, Philadelphia.

4. "New Plan for the Treatment of Pneumonia," by G. R. Martine, Glen's Falls, N. Y.

5. "Some Clinical Aspects of Vomiting," by John H. Musser, Philadelphia.

6. "Differential Diagnosis of Varicella and Varioloid," by James T. Whittaker, Cincinnati.

7. "Some of the Rarer and Graver Forms of Cinchonism," by I. E. Atkinson, Baltimore.

SECOND DAY—JUNE 26.

1. "Chronic Endocarditis," by Francis Delafield, New York City.

Discussion by William Pepper, Philadelphia; W. W. Gannett, Boston.

2. "On the Nature and Treatment of Chlorosis," by William Osler, Baltimore.

3. "Hydronephrosis, especially as Caused by Functional Disorders of Micturition," by Robert T. Edes, Washington, D. C.

4. "The Induction of Premature Labor in Bright's Disease," by James Tyson, Philadelphia.

5. "The Treatment of Epilepsy," by Charles F. Folsom, Boston.

6. "Alkaloidal Medication per Rectum, A New Method of Medication," by Elmer Lee, St. Louis.

7. "Reynaud's Disease," George M. Garland, Boston.

THIRD DAY—JUNE 27.

1. "The Etiology and Pathology of Typhoid Fever," by Victor C. Vaughan, Ann Arbor, Mich.

Discussion by Henry P. Walcott, Cambridge; William Osler, Baltimore.

2. "The Physiological Action of the Typhoid Fever Poison," by N. S. Davis, Jr., Chicago.

3. "Toxic Agents in the Blood as a Cause of Diseases of the Nervous System," by M. R. Crain, Rutland, Vt.

4. "Some Thoughts on the Etiology, Pathology, and Therapeutics of Phthisis Pulmonalis," by W. L. Schenck, Kansas City.

5. "Food in the Treatment of Consumption," by Solomon Solis-Cohen, Philadelphia.

6. "Trophopathy in Fatty and Fibroid Degenerations, with Presentation of Cases of Cure."

7. "Heat as a factor in Disease," by John H. Hollister, Chicago.

FOURTH DAY—JUNE 28.

1. "The Prophylaxis of Tuberculosis," by James C. Wilson, Philadelphia.

2. "Signs in Disease," by H. M. Brown, Hillsboro, Ohio.

3. "Ulcerative Endocarditis," by J. G. Truax, New York City.

4. "Myalgia," by Gustavus Eliot, New Haven, Conn.

5. "Veratrum Viride in the Treatment of Disease," by Thomas Legaré, Charleston, S. C.

6. "Stomach Rest and Cleanliness," by Mary E. Baldwin, Newport.

Section of Obstetrics and Diseases of Women.

Chairman—W. H. Wathen, M.D., Louisville.

Secretary—A. B. Carpenter, M.D., Cleveland.

1. "Note on the Use of Boric Acid in Gynecic Practice," by W. W. Potter, M.D., Buffalo.

2. "Bimanual Palpation as a Means of Diagnosis in Diseases of the Female Pelvic Organs," by Paul F. Mundè, New York City.

3. "Series of Five Hundred Confinements in a Maternity," by Joseph Price, Philadelphia, Pa.

4. "Observations on Abdominal Section, based on Two Hundred and Fifty Cases," by James B. Hunter, New York City.

5. "A New Procedure of Colpoperineoplasty by Glissement," by A. Doleris, Paris, France.

6. "Stricture of the Urethra in Women," by Ely Van de Warker, Syracuse, N. Y.

7. "The Inversion of the Uterus; Reduction by a New Method; Exhibition of Instruments," by Henry O. Marcy, Boston, Mass.

8. "Observations on Abominal Surgery, with Report of One Hundred Consecutive Cases Done in the Past Year," by W. Gill Wylie, New York City.

9. "Concealed Pregnancy, Its Relation to Abdominal Surgery," by A. Vander Veer, Albany, N. Y.

10. "The Routine Management of Cases of Acute Intestinal Obstruction," by J. Greig Smith, Bristol, England.

11. "The Medals of Benjamin Rush, Obstetrician," by Horatio R. Storer, Newport, R. I.

12. "The Field and Limitations of Supra-Vaginal Hysterectomy, and Methods of Operating," by L. S. McMurtry, Danville, Ky.

13. "Casuistry in Obstetrics," by Theophilus Parvin, Philadelphia, Pa.

14. "Fœtal Pathology," by W. H. Taylor, Cincinnati, Ohio.

15. "Tetanus following Ovariectomy," by Joseph Tabor Johnson, Washington, D. C.

16. Prof. J. Veit, Berlin, Germany. (Subject not given.)

17. "The Obstetrician as a Counselor," by Thomas Opie, Baltimore, Md.

18. "Injuries to the Bladder during Laparotomy," by A. Reeves Jackson, Chicago, Ill.

19. "Craniotomy and its Indications," by Joseph Hoffman, Philadelphia, Pa.

20. "Glandular Endometritis, Illustrated with Microscopic Projection," by Samuel N. Nelson, Boston, Mass.

21. "Electrical Treatment of Salpingitis, with Observations," A. Apostoli, Paris, France.

22. "Pelvic Abscess in the Female," by Wm. H. Parrish, Philadelphia, Pa.

23. "The Recognition and Treatment of Lacerations of the Cervix by the Obstetrician," by Henry C. Coe, New York City.

24. DeLaskie Miller, Chicago, Ill. (Subject not given.)

25. Prof. Gusserow, Berlin, Germany. (Subject not given.)

26. "Reasons for Drainage in Ovariectomy," by Hampton E. Hill, Saco, Me.

27. "When and What Kind of Obstetrical Forceps Should be Used," by Wm. S. Stewart, Philadelphia, Pa.

28. "Chronic Cystitis in the Female," by Augustus P. Clarke, —, Mass.

29. "Results of Removal of Uterine Appendages After One or More Years," by S. C. Gordon, Portland, Me.

30. "The Indications for, and Limits of, the Operation for the Removal of the Uterine Appendages," by E. E. Montgomery, Philadelphia, Pa.

31. "Observations in Connection with S. Weir Mitchell's Mode of Producing Fat and Blood," by W. H. Bond, St. Louis, Mo.

32. "Peritoneal Effusions," by Wm. H. Meyers, Ft. Wayne, Ind.

33. "The Rectification of Malpositions of the Head by Rotation with the Forceps," by Edward J. Ill, Newark, N. J.

34. "Pregnancy in the Retroverted Uterus, with Cases," by James R. Chadwick, Boston, Mass.

35. "The Therapeutic Value of Electricity in Gynecology," by L. S. Fox, Lowell, Mass.

36. "Alexander's Operation, with a New Method of Securing the Round Ligaments," by A. B. Carpenter, Cleveland, Ohio.

37. "The Use of Glycoboron in Gynecology," by Wm. Thornton Parker, Providence, R. I.

38. Bache McE. Emmet, New York City. (Subject not given.)

39. "Emmet's Buttonhole Operation," by Virgil O. Hardow, Atlanta, Ga.

40. "On the Treatment of Cancer of the Uterus," by Thomas Moore Madden, Dublin, Ireland.

41. W. E. B. Davis, Birmingham, Ala. (Subject not given.)

42. "A New Two-Ways Catheter for Uterine Irrigation," by A. Cordes, Geneva, Switzerland.

43. "The Application of Forceps to Transverse and Oblique Positions of the Head; Description of a New Forceps," by Henry D. Fry, Washington, D. C.

44. "The Galvanic Current in Gynecology," by A. Lapthorn Smith, Montreal, Canada.

45. "Tubal Pregnancy; Delivery at Six Months per Vias Naturales; Recovery," by Wm. M. Fineley, Altoona, Pa.

46. Thomas E. McArdle, Washington, D. C. (Subject not given.)

47. George R. Shepherd, Hartford, Conn. (Subject not given.)

48. W. B. Carson, St. Louis, Mo. (Subject not given.)

Section on Surgery and Anatomy.

Chairman—N. P. Dandridge, M.D., Cincinnati.

Secretary—W. O. Roberts, M.D., Louisville.

TUESDAY, JUNE 25—FIRST DAY.

1. "On the Surgery of the Lateral Ventricles of the Brain," by W. W. Keen, Philadelphia. Discussion, J. Collins Warren, Boston.

2. "Concussion of the Spine in its Medico-Legal Aspect," by H. H. Smith, Philadelphia.

Discussion by Herbert Judd, Galesburg; B. A. Watson, Jersey City; Edmund Andrews, Chicago.

3. "Surgery of Peripheral Nerves," by Maurice Richardson, Boston.

4. "Pathology and Treatment of Chronic Sciatica," by J. G. Carpenter, Stanford, Ky.

5. "Suspension and Extension in the Treatment of Chronic Sciatica," by C. C. Hunt, Dixon, Ill.

6. "Arthrectomy of Knee Joint," by E. H. Bradford, Boston.

WEDNESDAY—SECOND DAY.

1. "The Treatment of Stone in the Urinary Bladder," by W. T. Briggs, Nashville.

2. "Litholapaxy," by A. T. Cabot, Boston.

3. "Litholapaxy in Children," by Dudley Allen, Cleveland.

Discussion—"Choice of Operation for Stone," J. W. S. Gowley, New York; C. T. Gardner, Providence.

4. "Management and Treatment of Large Hernia," by J. Collins Warren, Boston.

5. "Open Wound Treatment of Hernia," by H. O. Marcy, Boston.

6. "Properitoneal Hernia," by Thomas W. Dulles, Philadelphia.

7. "Epicystic Surgical Fistula for Relief of Vesical Catarrh," by J. D. S. Davis, Birmingham, Ala.

THURSDAY—THIRD DAY.

1. "Some Further Considerations and Statistics of Abdominal Sections for Traumatism," by Thos. S. K. Morton, Philadelphia.

2. "Pelvic Surgery by Abdominal Section, its Past, Present and Future," by Jos. W. Price, Philadelphia.

3. "Peritonitis," by J. M. Baldy, Philadelphia.

4. "Drainage in Abdominal Surgery," by Charles B. Penrose, Philadelphia.

5. "A Plea for Early Abdominal Work," by M. Price, Philadelphia.

6. Title not received, by L. S. McMurtry.

7. "Chylous Cyst of Mesentery, with Report of a Case," by N. B. Carson, St. Louis.

8. "The Use, 25 Years Ago, of Polarity, Locating the whereabouts of a Lead Bullet in the Body of a Brave Soldier," by Addinell Hewson, Philadelphia.

9. "Fistula in Ano," by J. M. Matthews, Louisville.

10. "Wiring the Patella in Old Ununited Fracture," by W. C. Will, Danbury.

11. "The Healing of Aseptic Bone Cavities by Implantation of Antiseptic Decalcified Bone," by N. Senn, Milwaukee.

12. "Electrolysis in the Treatment of Stricture of the Rectum," by Robert Newman, New York.

13. "A New Rib Cutter, and a Case of Resection of Ribs for Drainage of a Pulmonary Cavity," by Charles Denison, Denver.

14. "The Absorption of Dead Bone," J. B. Hopkins, Philadelphia.

Section on State Medicine.

Chairman—J. Berrien Lindsley, M.D., Nashville, Tenn.

Secretary—S. T. Armstrong, M.D., U. S. Marine Hospital Service, New York, N. Y.

TUESDAY—JUNE 25, 2 P.M.

Section called to order. Announcement of titles of volunteer papers to be read Friday, June 28.

"The American Medical Association and its Relations to the Public Health," by N. S. Davis, Chicago, Ill.

"International Comity in State Medicine," by John B. Hamilton, Washington, D. C.

"Volunteer Sanitary Organizations as an Aid to Public Boards of Health," by H. R. Storer, Newport, R. I.

"The Importance and Essential Needs of Local Boards of Health," by W. C. Rives, New York, N. Y.

"Modern Sanitary Conditions," by Geo. E. Waring, Jr., Esq., Newport, R. I.

"Rural Sanitation," by Thos. M. Flandrau, Rome, N. Y.

"Report of the Committee on Uniform Medical Legislation in the United States," by Perry H. Millard, Chairman.

"Medical Legislation in the United States," by Perry H. Millard, St. Paul, Minn.

WEDNESDAY—JUNE 26.

Called to order; reading of minutes of preceding meeting.

Annual Address of the Chairman, by J. Berrien Lindsley, Nashville, Tenn.

1. "Quarantine of the Future," by W. C. Van Bibber, Baltimore, Md.

Discussion opened by J. H. VanDeeman, Nashville, Tenn.

2. "Etiological Relations of Water to Disease," by F. L. Sim, Memphis, Tenn.

3. "The Purification of Drinking Water for Cities," by Charles V. Chopin, Providence, R. I.

4. "Bacteriological Examination of Several Native Mineral Waters in the Bottled State," by George Minges, Dubuque, Ia.

5. "Report of the Standing Committee on

Meteorological Conditions," by N. S. Davis, Chairman.

6. "The Climatic Causation of Consumption," by Henry B. Baker, Lansing, Mich.

7. "Climatological Characteristics of Salt Lake City," by F. S. Bascom, Utah.

8. "Ranch Life in Texas for Consumptives," by J. R. Briggs, Dallas, Tex.

9. "Biometry, or the Measure of Life as Applied to Life Assurance," by Charles Everett Warren, Boston, Mass.

THURSDAY—JUNE 27.

Called to order; reading of minutes of preceding meeting.

Election of officers for the Section for the ensuing year.

1. "The Necessity for Sanitary Supervision of Schools," by George H. Rohé, Baltimore, Md.

Discussion opened by W. L. Schenck, Osage City, Kas.

2. "Do the Sanitary Interests of the United States Demand the Annexation of Cuba?" by Benjamin Lee, Philadelphia, Pa.

3. "Personal Disinfection in Scarletina," by L. D. Waterman, Indianapolis, Ind.

4. "Report of the Committee on Fœticide," by I. M. Quimby, Chairman.

5. "The Causation and Restriction of Infantile Mortality," by V. C. Vaughan, Ann Arbor, Mich.

6. "Is it Detrimental to the Health of Passengers on Shipboard to Convey to Port the Bodies of Persons who Die at Sea of Non-contagious Disease?" by I. N. Quimby, Jersey City, N. J.

7. "Disposal of House Refuse," by Alfred L. Carroll, New York, N. Y.

8. "The Benefits of Sanitation Applied to Obstetrical and Gynecological Surgery," by T. A. Ashby, Baltimore, Md.

9. "Stamina," by A. N. Bell, Brooklyn, N. Y.

FRIDAY—JUNE 28.

Called to order; reading of minutes of preceding meeting.

Reading of volunteer papers.

Section on Ophthalmology.

Chairman—George E. Frothingham, Ann Arbor, Mich.

Secretary—G. C. Savage, Nashville, Tenn.

FIRST DAY—JUNE 25.

1. Address by the Chairman, Geo. E. Frothingham, Ann Arbor, Mich., "The Need of Discussing Ophthalmic Subjects."

2. "The Prevention of Pain and the Improvement of the Stump following Evisceration of the Eye," by A. E. Prince, Jacksonville, Ill.

3. "What can we do to Induce the Government to Make the Census of 1890 Contribute Efficiently to a Clear Conception of the Causes of

Blindness in the United States," by Robert Tilley, Chicago.

4. "Advances in Our Knowledge of some Cerebral Ocular and Intra-Ocular Lesions which Facilitate the Diagnosis and Treatment of Important Diseases," by H. W. Williams, Boston.

5. "Ocular Symptoms of Diseases and Injuries of the Spinal Cord," by J. F. Fulton, St. Paul, Minn.

6. "Impaired Vision as a Result of Sunstroke," by A. R. Baker, Cleveland, O.

7. "Some Cases of Inflammation and Atrophy of the Optic Nerve, with Special Reference to Etiology and Prognosis," by J. L. Thompson, Indianapolis, Ind.

8. "The Non-Surgical Treatment of Strabismus Convergens," by E. J. Gardiner, Chicago.

9. "Tobacco Amaurosis," by Leartus Connor, Detroit.

10. "Paralysis of Accommodation from Concussion of Eyeball; Treatment," by Eugene Smith, Detroit, Mich.

SECOND DAY—JUNE 26.

1. "A Case of Sympathetic Irido-Choroiditis, Induced by Sarcoma of the Choroid, and Appearing Five Days After the Enucleation of the Sarcomatous Eye," Interesting Clinical History and Final Recovery," by F. C. Hotz, Chicago.

2. "Tumors of the Optic Nerve," by S. C. Ayres, Cincinnati.

3. "The Needless and Annoying Restraints after Eye Operations," by J. J. Chisolm, Baltimore.

4. "The Advantage of a Preliminary Iridectomy in Cataract Extraction," by LeRoy Dibble, Kansas City.

5. "Keratitis Trachomatosis," by J. H. Thompson, Kansas City.

6. "Gradation of Lenses," by Dudley S. Reynolds, Louisville.

7. "Glaucoma Fulminans, after Operations," by P. D. Keyser, Philadelphia.

THIRD DAY—JUNE 27.

1. "Traumatism of the Eye," by C. M. Hobby, Iowa City.

2. "Ametropia in Schools," by F. B. Tiffany, Kansas City.

3. "The Ametropiæ and Their Relation to Insufficiencies of the Recti Muscles," by J. W. Wright, Columbus, O.

4. "Embolus of the Inferior Branch of the Retinal Artery Visible with the Ophthalmoscope, Disappearance of Embolus and Recovery of the Greater Part of Visual Field under Massage and Nitrite of Amyl," by H. Gifford, Omaha, Neb.

5. "Intra-Ocular Diseases Caused by Chronic Rhinitis," by J. G. Sinclair, Nashville, Tenn.

Other papers have been promised, but as yet the subjects have not been announced. All who expect to read papers are requested to send the

title at once, either to the Chairman or Secretary of the Section, otherwise they can not be placed upon the programme of proceedings, which will be published soon by the Committee of Arrangements.

Section on Diseases of Children.

Chairman—J. A. Larrabee, M.D., Louisville.

Secretary—C. J. Jennings, M.D., Detroit.

FIRST DAY, JUNE 25.

1. "The Management of Infants during the First Year," by T. B. Greenley, West-Point, Ky.

2. "Cow's Milk for Infant Food," by E. F. Brush, Mt. Vernon, N. Y.

3. "Summer Diarrhœa and Dysentery" by N. Guhmann, St. Louis, Mo.

4. "Intestinal Diseases of Children during Hot Weather," by Peter Hooper, Philadelphia, Pa.

5. "Cholera Infantum, its Etiology and Treatment," by Steele Bailey, Stanford, Ky.

SECOND DAY, JUNE 26.

1. "Heart Failure in Diphtheria," by Geo. Wheeler Jones, Danville, O.

2. "Intubation of the Larynx, with Reports of Cases," by F. E. Waxham, Chicago, Ill.

3. "Scarlatina" by C. R. Earley, Ridgeway, Pa.

4. "Pathology and Treatment of Certain Complications of Scarlet Fever," by Talbot Jones, St. Paul, Minn.

5. "The Value of Hydrogen Dioxide in the Treatment of Diseases of Children," by Marcus P. Hatfield, Chicago, Ill.

6. "A Rule with Penalty in Public Schools," by David I. Booth, Sparta, Ill.

7. "Poliomyelitis Anterior Acuta," by S. P. Deahofe, Potsdam, O.

THIRD DAY, JUNE 27.

1. "Serious Abdominal Injuries of Children," Resulting from Traumatism Seemingly Trivial," by I. N. Love, St. Louis, Mo.

2. "Visceral Neuralgias in Children," by J. C. Wilson, Philadelphia, Pa.

3. "Atropine in Eneuresis," by Wm. Perry Watson, Jersey City, N. J.

4. "Adherent Præputium Clitoridis as a Cause of Chorea, with Report of a Case," by C. Henri Leonard, Detroit, Mich.

5. "A Further Study of the Cardiac Relations of Chorea," by Wm. Osler, Philadelphia, Pa.

6. "The Treatment of Heart Disease in Children," by J. A. Robison, Chicago, Ill.

FOURTH DAY, JUNE 28.

1. "The Physical Education of Children," by A. H. P. Leuf, Philadelphia, Pa.

2. "The Treatment of Tubercular Bone Lesions before the Joint is Invaded," by V. P. Gibney, New York.

3. "Notes on Surgical Diseases of Children," by Edwin Brock, St. Louis, Mo.
4. "Spine Bifida," by Norman Teal, Kendallville, Ky.
5. "Trismus Nascentiam," by A. V. Williams, Frankfort, Ky.

Papers have been promised from Jerome Walker, Brooklyn, N. Y., W. B. Atkinson, Philadelphia, Pa.

Section of Dental and Oral Surgery.

Chairman—F. H. Rehwinkle, Chillicothe, O.
Secretary—E. S. Talbot, Chicago.

TUESDAY, JUNE 25.

Address by T. H. Rehwinkle, Chairman.

1. "Facial Neuralgia Associated with Pregnancy," by W. W. Allport.

WEDNESDAY, JUNE 26.

1. "Diseases of the Antrum," by Wm. Carr.
2. "Fissures," by R. R. Andrews.

THURSDAY, JUNE 27.

1. "Care of the Teeth of Pregnant Women," by John Marshall.
2. "Statistics of Irregularities of the Teeth of Normal Individuals, the Idiotic, Deaf and Dumb, Blind and Insane," by Eugene S. Talbot.

Numerous other papers have been promised.

Section of Medical Jurisprudence.

Chairman—J. G. Kiernan, M.D., Chicago.
Secretary—S. C. Evans, M.D., Baltimore.

FIRST DAY, JUNE 25.

1. "History of Medical Jurisprudence," by Judge Amos G. Hull, New York.

SECOND DAY, JUNE 26.

1. "Tests of Insanity," by H. N. Moyer, Chicago.
2. "Monomania," by Clark Bell, New York.
3. "Legal Decisions on Insanity"—Chairman's Address, by Jas. G. Kiernan, Chicago.
4. "Massachusetts Insanity Laws," by T. W. Fisher, Boston.
5. "Illinois Insanity Laws," by Harriet C. B. Alexander, Chicago.

THIRD DAY, JUNE 27.

1. "Legal Aspects of Inebriety," by T. L. Wright, Bellefontaine, Ohio.
2. "Inebriate Criminals," by T. D. Crothers, Hartford, Conn.
3. "Social Aspects of Alcoholism," by E. C. Spitzka, New York.

FOURTH DAY, JUNE 28.

1. "Spinal Concussion," by S. V. Clevenger, Chicago.

Section on Dermatology and Syphilography.

Chairman—L. Duncan Bulkley, New York.
Secretary—W. T. Corlett, Cincinnati, O.

FIRST DAY, JUNE 25.

1. Address by the Chairman, "Recent Advances in the Treatment of Diseases of the Skin."
2. Discussion on "The Treatment of Tinea Tonsurans," opened by W. T. Corlett, and Henry Fleischner."
3. "The Prophylaxis of Ringworm of the Scalp," by Fred. J. Leviser, New York.
4. "Some notes on Hoang-nan," by J. V. Shoemaker, Philadelphia.
5. Analysis of 250 Cases of eczem-seborrhoicum," by George T. Elliot, New York.
6. "Prurigo hiemalis, or Winter Itch," by W. T. Corlett, Cleveland, Ohio.
7. "Dermatitis Exfoliativa," by E. N. Brush, Philadelphia.

SECOND DAY, JUNE 26.

1. "Discussion on "The Indications for and Duration of the Treatment of Syphilis, opened by L. Duncan Bulkley, or another.
2. "The Positive Diagnosis of Syphilis," by Ephraim Cutter, of New York.
3. "On Pruritus," by Henry Fleischner, New Haven, Conn.
4. "A Case of Painful Subcutaneous Neuroma (Neuro-fibroma)," by J. Abbott Cantrell, Philadelphia.
5. "Relations between Acne and Diseases of the Nasal Cavity," by Carl Seiler, Philadelphia.
6. "Answers to questions Deposited in Question Box Relating to Dermatology or Syphilography."

THIRD DAY, JUNE 27.

1. "A Case of Kraurosis Vulvæ," by A. H. Ohman-Dumesnil, of St. Louis, Mo.
2. "Use and Abuse of Soap and Water," by Merrill Ricketts, Cincinnati, O.
3. "The Treatment of Felon without Incision," by J. S. Miller, York, Penn.
4. "The Early Recognition and Treatment of Epithelioma," by L. Duncan, Bulkley, New York.

Section on Laryngology and Otology.

Chairman—W. H. Daly, M.D., Pittsburg.
Secretary—E. F. Ingals, M.D., Chicago.

1. "The Third Tonsil; Its Important Relation to Naso-Pharyngeal and Naso-Aural Catarrh," by Joseph A. White.
2. "Adenoid Hypertrophy of Vault of Pharynx—Pathology and Treatment," by Bryson Delevan.
3. "The Benefits to be Derived from the Radical Operation for the Relief of Nasal Stenosis," by Holbrook Curtis.

4. "Obstruction of the Nares Causing Nervousness," by Hal Foster.
5. "Empyema of the Frontal Sinus," by Geo. A. Richards.
6. "Clinical Notes," by J. D. Arnold.
7. Short Address, by Lennox Brown.
8. "An Analysis of One Hundred Cases of Cough Cured by Adoption of Operative Procedure in the Treatment of Existing Morbid State of Nasal Cavities," by J. E. Schadle.
9. "Clinical Observations in a Number of Cases," by Carl Seiler.
10. "A New Gag, and Some Conservative Observations about Intubation," by Chas. Denison.
11. "Internal Ear Deafness, Illustrated with Cases," by J. G. Carpenter.
12. "On the Value of Antiseptic Treatment of and Protection of Membrana Tympani in Perforation," by Laurence Turnbull.
13. "Report of Cases of Dangerous Middle-Ear and Mastoid Inflammations, which followed Treatment of Naso-Pharynx," by J. L. Thompson.
14. "Observations upon the Effect of Nasal Obstruction on the Middle-Ear," by F. Whitehall Hinkel.
15. "The Indications for the Excision of the Drumhead of the Ear," by Samuel Sexton.
16. "The Possible Danger to Middle-Ear as a Result of Nasal Atomization," by C. W. Richardson.
17. "Nasal Polypi in Children, and Double Uvula," by John McKenzie.
18. "The Relation of Tonsillitis to Rheumatism," by S. J. Radcliff.
19. "Morbid Perforations of Nasal Septum," by A. B. Thrasher.
20. "Perforating Ulcer of the Septum Narium," by Max Thorner.
21. "Chronic Obstipation of the Nares; Hernia," by W. Freudenthal.
22. "Affections of the Throat as Evidence of Diseases in other Localities," by Jas. E. Logan.
23. "Epilepsy Caused by Intra-Nasal Disease," by F. S. Crossfield.
24. "Effects of Natural Gas upon Upper Air Passages," by D. W. Rankin.
25. "The Influence of Disorders of Digestion on Catarrh of Air Passages," by A. M. Duncan.
26. "The Treatment of Acute Naso-Pharyngeal Catarrh," by S. S. Bishop.
27. "Congenital Occlusion of Naso-Pharynx, with Report of Two Cases," by F. O. Stockton.
28. "On the Use of Menthol in Upper Air Passages," by Frank H. Potter.
29. "Menthol in Laryngeal Phthisis," by C. H. Knight.
30. "Sclerosis of Mastoid Cells," by J. B. Lipincott.
31. "Malignant Tumors of Larynx," by H. A. Johnson.
32. "Laryngeal Gummata," by Robert Levy.
33. Glandular Hypertrophies at the Base of Tongue," by John O. Roe.
34. "A Case of Acute Rheumatic Laryngitis of Gonorrhœal Origin," by Wm. K. Simpson.
35. "Abscess of the Antrum of Highmore; Its Diagnosis and Treatment," by J. H. Bryan.
36. Nasal Bacteria," by Jonathan Wright.
37. "Treatment of Cystic Goitre," by E. Fletcher Ingals.

Papers are also expected from the following, but the titles have not been received:

Drs. E. L. Shurly, Louis Jurist, Wm. Porter, J. Mount Bleyer, Chas. E. Sajous, Thos. Legaré, Chas. Stover Allen, J. Solis-Cohen, C. E. Bean, F. I. Knight, W. E. Casselberry, E. R. Lewis.

Others desirous of reading papers in any of the Sections should at once send the title of their paper to Dr. H. R. Storer, Newport R. I., and to the Chairman of the Section in which they wish to read it.

HOTELS.

In Newport.—Ocean House, Bellevue Ave., \$4 per day, (special rate); The Aquidneck, Pelham St., \$3 per day, (special rate); Brayton House, Pelham St.; Cliff Ave. Hotel, on the Cliffs, \$2.50-\$3; Perry House, Washington Square; Central House, 14 Bath Road.

In Jamestown.—(Eighteen minutes by steam ferry from Newport. Boat making trips about every hour, each way.) Bay View House, C. T. Knowles, \$2 per day; Gardner House, Gardner & Littlefield, about \$2 per day; Prospect House, C. E. Weeden, \$2 per day; Champlins', Wm. A. Champlin, \$1.50 per day.

PRIVATE BOARDING HOUSES. \$1.25 TO \$5 PER DAY.

Ailman, Miss R. L., 62 Spring Street; Allen, Samuel, 79 Washington; Bailey, Mrs. John C., 84 John; Barker, Mrs. James P., 15 Clinton Ave.; Barker, Mrs. Jos. P., 304 Broadway; Bateman's, Brenton's Point; Bateman, Mrs. Joseph, Kay St. House; Bliss, Mrs. W. H., 6 West Marlboro; Bosworth, Mrs. P. S., 35 Spring; Bryer, Mrs. Peleg, 12 Park; Burbridge, Mrs. J., cor. Corné and Mill; Clark, Mrs. A. M., 42 John; Dame, Miss E. M., 78 Broadway; Dawley, Mrs. S. E., 24 John; Eldredge, Mrs. A. E., 36 Washington; Ellis, Mrs. J. J., 72 John St.; Essex, J. J., 252 Thames; Finch, Mrs. J. B., 27 High; Gifford, Miss M. A., 25 Farewell; Hall, Mrs. E. A., 137 Broadway; Henderson, Mrs. H. R., 1 Wanton Ave.; Kreis, Mrs. H. K., 101 Prospect Hill St.; Nason, Mrs. Geo., 28 John; Peckham, E. Truman, 7 Arnold Ave.; Peters, Mrs. Anton, 34 Broadway; Richardson, J. D., Jr., 13 Summer; Robinson, Mrs. M. J., 14 Catherine; Rudolph, Mrs., 106 Church; Russell, James M., 49 Washington; Seabury, Mrs. T. M., 16 Maun; Sisson,

Mrs. A. P. 81 Touro; Snow, Mrs. A. C., 8 Pelham; Swasey, Mrs. J. H., 74 Spring; Thurston, Mrs. Harriet, 92 Division; Townsend, H. A., 15 Rhode Island Ave.; Weaver, Mrs. Jacob, 216 Thomas St.; White, Mrs. Annie, 63 Broadway; Wilbour, Misses M. A. and H. L., 50 Washington; Wilbur, Mrs. A. A., 131 Church; Williamson, Mrs. E. F., 33 Ann.

PRIVATE LODGINGS (WITHOUT MEALS). FIFTY CENTS TO \$1 PER DAY.

Bishop, Mrs. A. H., 16 Chestnut St.; Brown, John, 18 Newport Ave.; Bullock, Mrs. Joseph H., 87 John; Congdon, Mrs. C. T., 100 Spring; Finlay, Mrs. A. M., 80 John; Goddard, Mrs. L., 38 John; Greene, A. M., 54 John; Hammond, Mrs. C. E., 12 Appleby Ave.; Kelley, Mrs. G. H., 16 Bay View Ave.; Lawton, H. R., 66 John; Leddy, Mrs. M. S., 38 Franklin; Lee, Mrs. Wm. H., Corné St.; Martin, Miss, L. D., corner John and Martin Sts.; Milne, Mrs. W. O., 8 Everett; Mumford, Miss H. E., 8 N. Baptist St.; Ordway, Mrs., 84 Division; Pitman, Mrs., corner Martin and Prospect Hill Sts.; Simmons, Mrs. W. B., 9 Meeting St.; Slocum, Mrs. Geo. S., 35 Green; Stanton, Mrs. R. H., 42 Washington Square; Stewart, Mrs. J. C., 80 Division; Titus, Mrs. I. W., 14 Everett; Weeden, Mrs. C. D., 2 Allen Ct.

Notice to Exhibitors.

For the accommodation of exhibitors the local committee of arrangements has contracted for the erection of a temporary building as the most feasible and advantageous provision which can be made for the display. This building is to be put up on a lot the use of which is gratuitously given for the purpose by John G. Weaver, Esq. The lot adjoins the lot on which stands the Music Hall, in which the general sessions of the Association are to be held, and it is also contiguous to the Ocean House, the largest hotel. The contract provides for a one story, sloping roof structure, twelve feet high at the eaves, built of planed, matched, grooved and tongued boards, the studing and floor planed, with windows eight feet apart from centre to centre, the whole wind and rain proof. This building is to be made of a size to accommodate such accepted exhibitors as have made application for space previous to May 30. By the return of the material to the builder after use the net cost of the building is to be at the rate of \$19.00 for each 100 square feet of floor space. Out of this floor space must be taken room for aisles, and there will be some few incidental small expenses, as for night watchman, safeguards against fire, etc., so that the cost to exhibitors will be at a rate somewhat exceeding \$20.00 for each 100 square feet of floor space occupied. The committee will try to keep the sum total of expense as low as possible for satisfactory accommo-

dations, and to divide the whole cost equitably among the exhibitors. The building is to be so situated in a large lot as to have air and light on all four sides; there is to be an entrance at each end, and there can be no poor location in it. In the assigning of space regard will be had as far as possible to priority of applications, to expressed preferences and varied needs of exhibitors, and to economy of space. The committee consider themselves as acting as agents of the exhibitors for the mutual convenience of the whole, and they can assume no responsibility for the safety of exhibits. If insurance of any kind on exhibits be desired, it should be procured by the owners.

C. A. BRADSETT,

E. P. ROBINSON,

Sub-Com. on Exhibits, Am. Med. Association.

Railroad Arrangements.

The Local Committee of Arrangements and the Committee of Transportation at Newport hope to be able to announce definitely in the next issue of *THE JOURNAL*, that arrangements have been perfected whereby members and those who accompany them to the forthcoming meeting will be able to purchase their tickets at a rate not to exceed one fare and a third for the round trip. It is expected that the various railroads will grant this courtesy, and whether the tickets will be sold on the certificate plan for the entire distance, or whether round trip tickets will be sold at the starting-point to the place of meeting, are subjects that are being actively discussed by the various Traffic Associations at the time we go to press for this issue of *THE JOURNAL*.

Dr. Liston H. Montgomery, 189 Randolph St., Chicago, has been appointed a member of the Transportation Committee.

SOCIETY PROCEEDINGS.

The American Surgical Association.

Annual Meeting, held in the New Army Medical Museum, Washington, May 14, 15, and 16, 1889.

(Continued from page 751.)

DR. CLAUDIUS H. MASTIN, of Mobile, read a paper on

HERNIA—A COMPARISON OF THE VARIOUS METHODS ADOPTED FOR ITS RADICAL CURE.

inviting discussion of their respective merits. Reference was first made to the great frequency of this condition. The Census Reports of 1880 show that of the total number of deaths, 1 in

every 600 was due to hernia, and out of 1,236 deaths from hernia, 141 occurred in children under one year of age. A historical review of the various operations proposed for the radical cure of hernia from the earliest times down to the present, was then given.

The paper proper concluded with the following remarks :

"The ligature of the sac at its neck, with suture of the pillars of canal and ring, may be considered an established surgical procedure ; still being a comparatively new operation, a discussion of its merits will be of practical value in leading to further improvements, and with them permanent success of the operation. With the present lights before us, the most important point in the operation appears to be closing the neck of the sac as high up as possible, so as to effectually seal up the opening into the abdominal cavity. To do this completely it is necessary that the sac should be carefully separated from the adjacent tissues, and this is not always an easy matter, since oftentimes the true sac is obliterated and a new sac formed in the fibrous tissue, with the vascular and nervous distribution blended in such a manner as to render the dissection most difficult, if not impossible. In such a case MacEwen's operation could not be performed, and it would be impossible to twist the sac as recommended by Mr. Ball. This objection does not obtain in crural and umbilical herniæ, still since inguinal is the most frequent of the herniæ, it is of importance in them. In congenital cases, it is much easier to separate the sac and hence more possible to do a complete operation ; but since in young children, the truss properly applied and long continued, until the abdominal parieties have been so developed as to increase the obliquity of the canal, will in most instances produce a permanent cure, all operative procedures in children should be considered unwarrantable. In those cases, however, where an imprisoned testicle complicates the condition, the operation is unquestionably proper and the removal of the testicle justifiable, and for the simple reason that the presence of the gland in the canal predisposes to the descent of the hernia.

Since the main point in the success of the operation appears to have been the proper disposal of the sac it is not astonishing that operators who have given it their attention should have adopted diverse methods, each one of which has the same end in view. Whilst Ball twists it, MacEwen tucks it up ; Hardee insists upon the importance of inclosing the transversalis fascia with the sac in the ligature ; J. D. Bryant splits the pillars on either side and weaves in the sac ; Annandale opens the canal, ties the sac, cuts it away and stitches the opening ; on the other hand Stokes opens the sac and then stitching the neck, the canal and the pillars together, he leaves the sac in position ; Banks opens the sac, ligates the neck,

cuts away the fundus and sutures the pillars ; Alexander, of Liverpool, opens the canal, ligatures the sac flush with the peritoneum internally, then divides the neck below the ligature, leaving the sac in the canal without suturing the ring ; MacCormac advocates this plan, while Buckhanan cuts down to the sac, slits it up longitudinally on each side of the cord, divides the front part horizontally, rolls up the upper part, with which he plugs the internal ring and turns down the lower half to form the tunica vaginalis.

From a comparison of all the methods, it is apparent that no fixed rule of procedure is established, and although the radical operation is a marked improvement in the treatment of hernia, whether free or strangulated, we cannot consider it perfected, because the methods hitherto resorted to have not proved radical in results. The operation is ideally correct, but the question arises, whether, with the uncertainty of success, the risk justifies the operation, especially so if the circumstances of the individual are such that he can content himself with the use of a properly adjusted truss.

DR. M. H. RICHARDSON, of Boston : My experience with the operation for the radical cure of hernia has been small. Sufficient time has not elapsed to permit us to say what the ultimate result will be. My preference has been for the invagination of the sac as proposed by MacEwen. I do not advocate the operation in trivial cases of hernia. Here I believe that the application of a well-fitting truss is the most conservative and better plan.

DR. D. HAYES AGNEW, of Phila. : We have to yet speak with a good deal of reserve as to which is the most successful operation. Sufficient time has not elapsed to enable us to speak positively upon this subject. The operation which seems to me most applicable is that in which the sac is ligated, pushed into the internal ring, stitched there, and transverse sutures passed across the canal. I think that the omentum will constitute an important element in the radical cure of hernia. I believe that in all cases of strangulated hernia we are justified in attempting the radical cure. The same is true in those cases of hernia which cannot be controlled by a truss leaving the patient exposed to great risk.

DR. W. W. DAWSON, of Cincinnati : In cases where life is not in jeopardy we should approach the operation with a great deal of consideration. I have seen very different results from the same operation performed with equal care in cases apparently similar. Where life is in danger, duty impels us to operate, but where the question is one of æsthetics or abridged usefulness, the operation should be approached cautiously.

DR. L. McLANE TIFFANY, of Baltimore : My operation for radical cure in cases of strangulated hernia are more successful than formerly, and I

attribute this to the fact that I operate now in a more cleanly manner. I think that no operation for strangulated hernia is complete unless an attempt at radical cure is made. When the hernia is not strangulated, the question arises as to the kind of hernia, the inconvenience that it causes, and the circumstances of the individual. I do not believe that the operation, *per se*, is likely to be followed by much trouble. The method to be employed must be determined by the peculiarities of the case. In regard to children, I think in congenital hernia, especially where it is probable that the child will have to work for its living, that it is the duty of the surgeon to operate. Here it is not necessary to open the peritoneum. A ligature is thrown around the sac above and another lower down, and the intervening portion excised, forming a tunica vaginalis below and a peritoneal sac above.

DR. D. A. YANDELL, of Louisville: I believe that in strangulated hernia the surgeon should attempt the radical cure. This has been my practice and I have used various methods. It is difficult for any one man to decide which is the best operation, but in the course of ten years we shall be able to arrive at some opinion. At present it is simply historical and no one can say which is the best method.

DR. J. FORD THOMPSON, of Washington: So far as my experience has gone, I think there is very little difference in the operations. The main point is to get rid of the sac. I think that suture of the pillars is useless. The operation that I have employed is practically that of McBurney. In strangulated hernia it seems to me that there must be danger in inverting the sac as in MacEwen's operation. I have seen many cases of hernia in children, but I have never been able to adopt the view of Dr. Tiffany. As a rule, if we can keep the intestine reduced, the hernia is cured in a comparatively short time. In some cases of large hernia in children the radical operation is probably justifiable.

DR. W. W. KEEN, of Philadelphia: We doubtless all agree that in strangulated hernia no operation is complete without an attempt at radical cure. We also agree that in those cases where the hernia is not controlled by a truss and the patient is unable to labor, radical operation is advisable. The tendency at the present time is to extend the limits of the operation beyond these two classes. The presence of hernia is always attended with risk; hence the tendency at present is to operate on a larger number of cases. In children if the retentive measures after a thorough trial for a few years fail to effect a cure, I should be inclined to operate. In very large hernia, I should not be inclined to use MacEwen's method. The life of the sac is imperilled by separating it. In large hernia a certain amount of preparatory treatment is desirable to accustom the abdominal cavity to

the presence of the intestine, and thus prevent undue pressure upon the diaphragm and strain upon the sutures. In the more ordinary cases I think that the operation of McBurney is the best. I should place the operations in the following order: McBurney's, MacEwen's, and Ball's.

DR. C. H. MASTIN, of Mobile: I have little to add. The object of my paper was to elicit discussion as to the best method of operating. I have performed 34 operations for hernia, with 3 deaths. Two of these may be excluded, as the patients were *in extremis* at the time of the operation. This leaves 32 cases, with 1 death. Of this number there have been 8 radical cures. One of these cases I have watched for seventeen years. The method employed was after the sac was opened to pass a deep pin through the pillars, with an ordinary twisted suture over it, close the incision and place the leg on a double-inclined plane. Thirty-one cases have recovered with primary union. I believe that the cure is produced by the dense cicatricial tissue formed in the canal.

DR. J. R. WEIST, of Richmond, Ind.: I have operated on strangulated hernia 41 times. In 30 cases I have attempted to make a radical cure, using a variety of methods. In only 4 cases have I succeeded in keeping the hernia in. A number have remained well for six months to two years, and then the hernia has reappeared as bad as ever.

DR. M. H. RICHARDSON, of Boston, read a paper on

THE SURGICAL TREATMENT OF GANGRENOUS HERNIA.

The principal question discussed was the relative advantage of immediate excision and suture of the bowel, and the formation of an artificial anus, with subsequent closure. The views of various authorities were first quoted. The author then briefly reported the cases coming under his own observation.

Case 1.—A young woman with right femoral hernia, strangulated for one week. Bowel was found gangrenous and excised. Death from shock the next day.

Case 2.—Woman, *æt.* 65 years. Left inguinal hernia. On opening the sac the bowel was found strangulated and dark in color. The hernia was reduced, but the symptoms of obstruction continued, and five days later the sac was opened and the intestine found strangulated by a band within the ring. The bowel was drawn out, the strangulated portion excised and the ends sutured. The patient died of shock.

Case 3.—Woman, *æt.* 42 years. Had been treated by Christian Scientists for five days. There was a large umbilical hernia, with gangrenous intestine. The sac was filled with fecal matter. The constriction was found and the bowel drawn out and excised beyond the constrict-

tion and the ends united. This patient recovered perfectly and has remained well.

Case 4.—A woman with enormous umbilical hernia, with strangulation and gangrene. The faecal abscess opened by natural processes and the woman has been in perfect health since, with the exception of the artificial anus. This will be operated on next week.

In the two cases of excision the time required for the passage of the sutures was twenty minutes; the whole operation did not exceed one hour. The longer the operation the more are the chances reduced.

Reference was then made to the use of the bone plates of Senn and the catgut rings of Abbe. These devices may do more in these cases than anything else. Every case must be decided on its merits. The danger to life of resection in suitable cases is probably not greater than the danger of artificial anus with the dangers attending the subsequent closure of the same. The danger of the latter operation is especially great where the opening is near the stomach. Artificial anus is also objectionable on account of the excoriation of skin which attends it, and also the risk of giving way of the sutures.

The author concluded as follows: It seems to be the general opinion of surgeons everywhere that, under some circumstances, excision and suture are justifiable. It seems to me that the primary operation should only be done where all the conditions are favorable. It is preëminently a hospital operation. Every appliance and preparation should be ready for its most perfect performance. It is not an operation to be recommended to the general practitioner or to the unqualified operator. It depends for success more often upon rapid and skilful execution than almost any other operation.

There is no doubt that in some cases this procedure is imperative, where the part necrosed is too high up for intestinal nutrition to be maintained. The difficulty, of course, is to recognize this state of things. Even when it can be demonstrated that the jejunum is gangrenous, excision is not justifiable unless the patient's condition offers some hope, and there is a chance that the relief of the symptoms of obstruction may be followed by sufficient improvement to make a second operation unnecessary.

DR. D. HAYES AGNEW: My experience is too limited to enable me to say much upon this subject. I recall three cases of gangrenous hernia. One was a case of inguinal hernia in which I excised a portion of the bowel. The patient recovered from the immediate effects of the operation and passed out of my hands. Some months afterwards, he was advised by another surgeon to apply a compress to the external opening so as to compel nature to establish a communication between the two portions of bowel. He did so with

fatal results. The second case was one of femoral hernia which had lasted six or seven days. It was laid open and the patient recovered. As the granulations filled the opening, communication took place between the two portions of bowel. The third case was one of umbilical hernia. I opened the sac, excised 10 inches of intestine and carefully stitched the ends. The patient died of hæmorrhage at the end of two days. It occurs to me that it would be wise, in such a case, to stitch the intestine to the skin and at a subsequent period do this operation of Dr. Abbe.

DR. WILLIAM T. BRIGGS, of Nashville: Although I have seen many cases of strangulated hernia, I have seen but three instances of gangrenous intestine. In the first case I opened the abscess and the faecal contents escaped. The patient lived some time, but died of inanition. In the second case I attached the bowel to surrounding parts and made an opening into it. The patient died in twenty-four hours. The third case I left entirely to nature and the patient recovered with an artificial anus.

DR. P. S. CONNER, of Cincinnati: I have had three cases of gangrenous hernia and have seen a fourth in the practice of Dr. Dandridge. The operation of intestinal anastomosis is valuable. It can be performed rapidly, it is simple and establishes the continuity of the intestinal tract more perfectly than any other operation that has been suggested.

DR. W. F. PECK, of Davenport: From my experience, I think that great benefit in the way of prevention would result from educating the subjects of this trouble in regard to the dangers of hernia and the way of reduction.

DR. J. EWING MEARS, of Philadelphia: I have had two cases; one of umbilical hernia in which I made an artificial anus, the other of femoral hernia where I performed resection and returned the intestine to the abdomen. Both resulted fatally inside of forty-eight hours. A surgeon of Vienna has suggested that in these cases the gangrenous intestine be withdrawn from the abdomen and held in place outside by a tampon of iodoform gauze. In this way the intestine can be kept under observation and treated as seems best.

DR. W. W. KEEN, of Philadelphia: I think that the introduction of the method of intestinal anastomosis by the bone plates of Senn or the catgut ring of Abbe is a great advantage over former methods. The mortality following this method is greatly less than that following reunion of the ends of the bowel.

DR. T. A. MCGRAW, of Detroit: I have heard nothing in regard to the pathological condition of the bowel above the seat of stricture. In some cases the bowel is healthy immediately above the point of strangulation, while in others the inflammatory process extends 6 to 10 inches above the point of constriction. This must make a great

difference as regards the results of operation.

DR. A. VANDERVEER, of Albany: Eleven years ago I saw a case of gangrenous inguinal hernia, but the condition was so bad that nothing was done. The patient died a few hours later. Two years ago I saw a similar case, except that the patient was younger and the collapse not so great. I opened freely and left it to nature. The man recovered with an artificial anus.

DR. H. H. MUDD, of St. Louis: I think that gangrenous hernia is not so rare as seems to be the general impression. I can recall at least seven cases. Three of these cases occurred more than four years ago and all died. During the last four years I have operated on four cases, excising a portion of bowel, with recovery in one case.

(To be concluded.)

Philadelphia County Medical Society.

Stated Meeting, March 27, 1889.

THE PRESIDENT, S. SOLIS-COHEN, M.D., IN
THE CHAIR.

DR. W. W. KEEN read a paper on
UNCOMPLETED NEPHRECTOMY.

(See page 762.)

DR. DEFORREST WILLARD: I was unfortunately detained, and did not hear Dr. Steinbach's paper, but I understand that in his case the abdominal incision was employed. In Dr. Keen's case the lumbar incision was employed at the operation, but that at the post-mortem an attempt was made to remove the kidney by an abdominal incision in the semi-lunaris. I do not consider that this question in regard to the incision to be employed, is yet settled. As a rule, however, the anterior median method offers better opportunities for diagnosis, for examination of the other kidney, and for safe removal. In cases where a stone is suspected, or the presence of pus is probable, the lumbar incision is certainly proper, the operation may be simply a nephrotomy, and not a nephrectomy, and then we have better drainage. In simple purulent kidney, it is better to secure drainage and not remove the kidney. The results, so far as life are concerned, are better by this method. In tuberculous kidneys, the results of nephrectomy have been more satisfactory. In Bardenhauer's statistics,¹ numbering some thirty-five nephrectomies, where twenty-five were for purulent kidney of various forms, the mortality was not much higher than ordinary nephrectomy. Out of thirty-five cases he lost ten.

The choice of the incision will depend largely upon the condition of the case, and upon the

diagnosis. Many nephrectomies have been performed after the abdominal incision has been made for other purposes, as when the ureter has been cut in laparotomy. I do not know why it is any better, but Schmidt recommends that in such cases the kidney be removed by the lumbar incision. It seems to me that this would decidedly delay the operation, and would be more likely to cause contamination of the abdominal cavity. I do not think that the results are much more serious in the anterior operation than they are in the posterior.

My practical experience has been limited to two cases, one for gunshot wound, and the other for a tuberculous kidney, but in both I employed the anterior median route. In the first case there were evidences of wounds of other organs. In the latter case the kidney was pushed far anteriorly, and I thought the abdominal incision the better one.

The difficulties of the lumbar operation are certainly much increased where there is only a short space between the twelfth rib and the crest of the ilium. In Dr. Keen's case he found it impossible to reach the hilum; if he had employed the median incision at the post-mortem operation, instead of the incision through the linea semi-lunaris, he would have been able to have reached it without difficulty.

In regard to the sutures to be employed in *nephrorrhaphy*, I think that the failures have resulted from the use of catgut. We must employ a permanent suture, which will hold for a long time, and anchor the kidney until it is thoroughly fixed in its position. The question of decubitus is of importance. A month is the shortest possible time we can expect any fixation. The use of pads is very unsatisfactory. We are obliged to apply the pad upon the abdominal walls to an organ that lies deep in the loins with the intestines in front of it. We cannot hope to hold it in position by any such means. Therefore the dorsal decubitus should be maintained for a long time.

DR. M. PRICE: The case of Dr. Steinbach is certainly a very interesting one, and I see no other course save that which he tried, of operating by the abdominal method. Even in Dr. Keen's case, where he states that the first idea was an exploratory operation, I think that the anterior method would have been better. I think it is the better plan, even if after making the diagnosis you close the abdominal incision and remove the kidney by the lumbar method. An incision one and a half inches in length affords ample room for the examination of all the organs. I have twice examined both kidneys through such an opening. In one case of supposed gall-stones, I found the viscera attached to the abdominal wall. After separating them, I examined the kidneys without difficulty, and found them in

¹Berlin. klin. Woch., October 15, 1888. Philadelphia Medical News, December 1, 1888.

good condition. In the case where I removed the kidney, I had no difficulty in feeling both kidneys through a small abdominal incision. I think that if Dr. Keen had made the median abdominal incision, and found the kidney so seriously diseased, he probably would not have made as great an effort as he did through the lumbar incision.

Dr. Steinbach, in his report, does not state whether or not he used drainage. My impression is that the anterior route is the best for drainage, which, in these cases, is of paramount importance. So much tearing is done in releasing the kidney that drainage for twenty-four or forty-eight hours is necessary, or at least can do no harm. I do not believe that any drain answers its purpose so well as one that can be cleaned by the attendant or nurse. The best method to stop oozing of blood is to keep it cleaned away. Keep no blood in contact with the bleeding vessel.

I consider the danger no greater by the anterior than by the posterior method. It is the only method to employ in cases of gunshot wounds.

In regard to the use of morphia, I differ from Dr. Steinbach, unless he had made up his mind that the patient was going to die. I believe that morphia has a tendency to cause suppression of urine. It also lowers the vitality and assists in killing the patient. I should not think of using morphia in abdominal cases unless the patient were dying. Where morphia has been used in surgery, and especially in abdominal surgery, I have had cause to regret it.

DR. JOHN B. DEEVER: I may say a word in regard to the choice of incision. I have operated both by the abdominal and lumbar method. I consider that the anterior incision is preferable in cases of solid growths, particularly where they have reached any size. We run greater risks in attempting to break up the adhesions to the capsule by the lumbar incision, where we cannot see what we are doing, than we do through the anterior incision.

The proper course is, I think, to go through the linea semilunaris. This brings us nearer to the organ, and gives a better opportunity to work to the outer side of the colon, which is important, as the blood-vessels are in relation to the internal layer of the meso-colon, and not with the external layer.

In cases of liquid accumulations in the kidney, I do not think that we operate with quite as much facility anteriorly as posteriorly. The lumbar incision affords better opportunities for drainage under these circumstances, but drainage can be satisfactorily accomplished by the anterior method by the glass drainage tube.

The abdominal incision affords us better opportunities for the examination of neighboring organs. For purposes of diagnosis it is more satisfactory than the operation through the loins.

There is no doubt that nephrorrhaphy the

proper form of suture is antiseptic silk. I know of one failure resulting from the use of catgut. It is probably impossible to pass sutures through the capsule of the kidney without also involving the substance of the organ, yet I think if we could avoid wounding the kidney it would be better. I have no doubt that the appearance of albumin in Dr. Keen's case after the operation, was due to the sutures.

In regard to the meso-nephron, I have seen several cases of floating kidney in the dissecting-room, and I have yet to meet with an instance of a reflection of the peritoneum which could be called a meso-nephron. While I would not differ from so distinguished an authority as Dr. Morris, yet I have not met with this condition.

The question of removal of solid growths of the kidney is largely influenced by the age of the patient. It is almost useless to operate for carcinoma of the kidney in early life or in late life, so that the middle period offers the best chances for a favorable result in these cases.

DR. THOMAS R. NEILSON: In looking over the literature of nephrectomy, one is struck by the variableness of operators as to the method chosen to reach the kidney; and the remarks that have been made to-night clearly illustrate this. One writer will prefer the lumbar incision another will select the abdominal method, while a third will use either plan, and yet in all the instances the disease may seem to be about as extensive and the size of the kidneys may be the same. A great deal depends upon the choice of the operator, as well as upon the condition and proportions of the patient.

The statistics of the removal of the kidneys for malignant disease are so unfavorable that any operation seems to be almost hopeless; nevertheless, I do not think, that in individual cases, this should be a contra-indication if the operation seems to be justifiable on other grounds. In children, the statistics of Dr. Gross, in 1885, were that in thirteen operations only four recovered from the operation, and these subsequently died from return of the disease elsewhere.

In operating in cases of wound of the kidney, it would seem to be guided by the position and extent of the wound. If the wound involves the abdominal viscera, no one would hesitate to open the abdomen. On the other hand, if there were any doubt, the course of the wound should be followed and the kidney reached and explored. If there are marked signs of hæmorrhage, the operation should be performed at once. Even if the hæmorrhage is retro-peritoneal, it may be assumed that, sooner or later, the clot will by pressure force its way through the peritoneum and cause septic peritonitis. Careful exploration and thorough drainage in these cases is absolutely requisite. In subparietal wounds of the kidney, if operation be necessary, it would seem that the

only choice is the lumbar incision. As illustrating the tolerance of the kidney for a certain degree of injury to its substance, a point to which Dr. Keen has called our attention, I may mention the following case: Some years ago I saw, at the Episcopal Hospital, a man who was brought in with a large hæmatoma of the back, the result of being struck in the loin by the buffer of a locomotive. He recovered without operation. A year later he returned to the hospital with symptoms of stone in the bladder. At the operation instead of a stone, there was found a spicule of bone, one-fourth of an inch wide, and one-half or three-fourths of an inch long. I assume that there had been a fracture of one of the lower ribs, a fragment of bone being driven into the kidney or its pelvis, and later finding its way into the bladder.

DR. HENRY F. FORMAD: I rise to protest against the rather loose pathological nomenclature in regard to malignant disease of the kidney. We hear of cancer of the kidney and of sarcoma of the kidney. Alveolar sarcoma and cancer are used synonymously. This is Virchow's view. According to modern views all of these things are sarcomas. Again, there is no such thing as epithelium in the kidney. There is only epithelium which cannot give rise to cancer.

It is a true mesoblastic growth which can only give rise to sarcoma. We can take for granted that all of these cases reported as cancers are sarcomata.

In sarcomata there are sometimes hæmorrhagic infarctions which give rise to indurated masses, and on section give to the growth the book appearance of cancer.

It is a well-established fact that tumors of the kidneys and of the suprarenal bodies will not encroach upon surrounding structures. They do not cause metastasis; so that removal of the diseased kidney to prevent the spread of the disease is unnecessary. In view of the bad statistical results, I think it would be better if these cases of malignant disease of the kidney were let alone.

I have a point to make in regard to floating kidney. I began to record the occurrence of floating kidney, having pretty good opportunity to do so. I was so successful that every day I found a floating kidney. I began to investigate and I found that every woman had a floating kidney. The right kidney of nearly every woman is so loosely attached that floating kidney on the right side is a normal condition in woman. Actual floating kidney is merely a question of degree. When you attempt to reach the right kidney in autopsies on women it is difficult to find it, as it is never in the same place. It never lies in close proximity with the liver as in man.

DR. WILLIAM J. TAYLOR: I had the pleasure of assisting at the operation of Dr. Keen and would emphasize the fact of the tremendous

hæmorrhage, and also the extreme density of these calcareous masses. They felt exactly like a stone.

DR. JAMES TYSON: I would say a word with reference to the etiology of floating kidneys. I have had a number of such cases under observation. In searching for the cause, I have been compelled to conclude that in the majority of instances it is congenital, and what has been stated by Dr. Formad serves to strengthen this view. I have seen most typical instances of floating kidney in men, and I have seen it more frequently in women who have never borne children than in those who have had children. Even in those cases where it is supposed to have been caused by accident, I think that in all probability the condition has been congenital, and, if anything, only exaggerated by the fall.

In regard to the treatment of floating kidney by the use of pads, etc., I have had surgeons in consultation in cases of this kind, and I have never seen any advantage result from such devices.

DR. WILLIAM HUNT: I have recorded a case in which a fast kidney was found in the wrong place, which might confuse an operator cutting for the organ on account of symptoms. Some years ago, I made a post-mortem at the Pennsylvania hospital on a man who had died of concussion of the brain, in which I found the left kidney, enveloped in its capsule, lying upon the fourth and fifth lumbar vertebræ and partly covering the promontory of the sacrum. The sigmoid flexure passed along its outer and superior edges, while the rectum ran along the inner edge and from thence down the middle line of the sacrum. The emulgent vessels entered from above through a fissure in the kidney, leading diagonally from the superior edge to the pelvis.

The pelvis of the kidney and the ureter were normal, though of course the latter was shorter than usual. The sigmoid flexure embraced the kidney in its folds.

DR. J. M. BALDY: As regards the relative value of the lumbar and abdominal incision, the abdominal seems to me to present several points of advantage. Through the abdominal incision both kidneys can be reached with little difficulty. In all these troubles it is important that the second kidney should be examined, if the removal of one is contemplated. Where the lumbar incision is adopted this is, of course, impossible, and the difficulties of examining even the diseased kidney are well shown by the case under discussion. In the abdominal operation, the condition of the kidney could be determined, and just such accidents as happened in Dr. Keen's case—the stripping off of the capsule and the dangers of hæmorrhage and shock—would be averted.

There is great importance in drainage. A tube that can be kept clean, is the drainage tube *par excellence*—the glass tube is such.

In one case of malignant disease, in which I witnessed the removal of the kidney by the abdominal incision, the hæmorrhage not being entirely controlled, the peritoneal cavity was entirely closed off from the bed of the kidney by stitching the cut edges of the peritoneum together; prior to this, however, a counter-opening was made through the muscles of the back, and thus good drainage secured. Patient made a good recovery.

DR. JOHN B. ROBERTS: I wish to refer to a case of cure of movable kidney without operation. I had a boy, 7 years of age, referred to me four years ago by Dr. M. O'Hara. At irregular intervals the patient was seized with severe pain in the left side of the abdomen, and with this there was the appearance of a tumor in the hypochondrium and total suppression of urine. Various theories had been held to explain the condition. The only conclusion that I could reach, though this was not shared by Dr. O'Hara, was that the boy had a floating kidney, and that at the times of the paroxysms the ureters became twisted, causing the suppression of urine and the intense pain. The boy never had any pain or trouble with the urine except when the tumor was felt. At my suggestion Dr. O'Hara had made a pad which pressed against the left hypochondrium. This was worn for a short time. The boy then passed from my notice, but I learned a few days ago that he had perfectly recovered. There is, of course, in this case an element of uncertainty in regard to the diagnosis. When I looked into the literature of this subject, I was surprised to find how much stress was laid upon the possibility of the ureters becoming twisted, and the flow of urine being interfered with.

I wish, in connection with the question of the lumbar incision, to refer to an accident which I had in an attempt to explore the kidney for a supposed renal calculus. After making the incision down to the kidney, I determined to enlarge it a little. The diaphragm hung down in a fold and was readily seen. I made my incision a little longer in the upward direction, and made a minute perforation in the diaphragm where it is attached to the spinal column. There was a loud whistle as the air rushed into the pleura. I put in a suture and closed the opening, and no harm was done; but for a few days the patient insisted that the bandage was too tight, because he could not breathe freely. The pain which the patient had felt disappeared after the operation, although no stone was found. He went home before the wound had closed, and a number of months later died of some obscure disease.

It is important to recollect, when operating close to the vertebral column, that the posterior attachment of the diaphragm near the middle line extends further down than might be realized from watching its loose muscular curtain exposed in the wound.

DR. G. G. DAVIS: Dr. Formad seems to characterize all these growths as alveolar sarcoma. In primary growths of the kidney this may be correct, but such a statement gives one the idea that there is a sameness about these growths which is not the case. The tumor presented by Dr. Keen has the macroscopic appearance of scirrhus. In other specimens the growths may be smooth, resembling sarcoma found in other parts of the body. The macroscopic appearances of these tumors are decidedly different. When it is said that all growths of the kidney are alveolar sarcomata, I think that a mistake is made. Is not the kidney subject to secondary growths? We have an illustration of this in the case of Dr. Grove's. In his case, the first manifestations at least were in the axilla. In the report of the microscopical appearances, I did not hear the term alveolar sarcoma used. The disease of the kidney was what is commonly known as melanotic sarcoma. It was not supposed that the organ was the seat of a growth peculiar to the kidney.

DR. HENRY F. FORMAD: I did not mean to say that all tumors of the kidney were alveolar sarcomata. We have other forms of sarcoma, but what is commonly called cancer is alveolar sarcoma. Secondary growths of any character may occur, and even cancer may be secondary; but it will be only an insignificant part of the general disease.

DR. S. SOLIS-COHEN: The administration of morphia in these cases has been referred to. It is extremely dangerous to use morphia in any case in which the kidney has been treated surgically. I have seen several medical cases in which the use of morphia has produced suppression of urine. This point should be borne in mind by surgeons in the treatment of these cases.

DR. STEINBACH: I had expected criticism in regard to the diagnosis of my case, but nothing has been said on this point, and I therefore have little to reply to. Reference has been made to drainage. I was prepared to drain, but there was practically no hæmorrhage, and the whole procedure was perfectly clean, so that drainage was not required.

The dose of morphia given was very small, and was given without my personal knowledge. We have a house mixture containing small quantities of bromide and morphia. One dose of this was administered by the house physician. I do not use morphia after other surgical operations, and certainly would not use it in such cases as this unless strong indication existed.

DR. W. W. KEEN: I think that there is no doubt that in the case of a large tumor of the kidney, particularly a large solid tumor the size of which cannot be diminished by tapping, the position taken by several of the speakers is correct—that the anterior incision is the proper one. Where there is a small growth, or a stone in the

kidney, or the operation is an exploratory one, I cannot think that the anterior incision is the best. Statistics certainly show that the lumbar incision is attended with much less risks than the anterior. Where there is no reason to suppose that an unusual amount of room will be required, I think the lumbar incision is the proper one to employ.

It has been also suggested that possibly the anterior incision, in the present case of nephrectomy, would have given so much information that I should have decided not to operate. I do not think that I should have reached any such conclusion, for it was not the character of the growth, but the adhesions at the hilum that interfered with the removal of the organ, and these could not have been determined until the operation was in progress. I think that it would have been as impossible to remove the kidney by the one method as by the other. I had the pleasure of seeing Dr. Steinbach's case, but only for a moment just prior to the beginning of the operation, and I certainly was convinced that it was a case of enlarged gall-bladder with gall-stones. The slightest movement caused a grating of one stone upon the other. The tumor was in the position of the gall-bladder. I never before saw a kidney so displaced. The long axis, instead of being vertical, lay in an antero-posterior position, and the upper end of the kidney occupied precisely the position of the gall-bladder. The steps of the operation have been well described by Dr. Steinbach, and I have nothing to add. The mistake in diagnosis, under these circumstances, was very natural.

BOOK REVIEWS.

ELECTRICITY AND THE METHODS OF ITS EMPLOYMENT IN REMOVING SUPERFLUOUS HAIR AND OTHER FACIAL BLEMISHES. By PLYM. S. HAYES, A.M., M.D. Chicago: W. T. Keener.

The author has given the profession this little volume of 128 pages setting forth the subject in clear and concise language. In regard to the use of electrolysis in the removal of hair we learn that it has stood the test of not less than thirteen years and still stands as the most efficient means to be employed for this purpose. The book answers all possible inquiries that might arise in the mind of one interested in this subject, but still it does not hesitate to state that in no operation where human life is not involved does experience count for more than in this comparatively simple and easily executed procedure. We note that the author's ten years' experience in this use of electricity has taught him to anticipate the weakness of his fellow practitioner, whose mind is early reassured by the statement that he need know

nothing of the theory of electrolysis, but that he must understand that the galvanic current is the only one to be employed. And finally, under the admonition of a series of "Don't's," he says: "Don't attempt to use the faradic current for electrolysis." Would anyone think of doing so who had at any time in his life read a work on elementary physics, such as is in daily use in the common schools. We certainly hope he would not; and yet, however much we dislike this intimation against the learning of the medical profession in a branch of elementary science, we must, nevertheless, bear it, for facts seem to justify it.

If all books which are written for a presumably scientific body, *i. e.*, the medical profession, were written in a thoroughly scientific manner, utterly ignoring the wants of the untutored, it would be infinitely better, not only for that profession, but for their literature. F. H. M.

HANDBOOK OF THE DIAGNOSIS AND TREATMENT OF THE DISEASES OF THE THROAT NOSE, AND AND NASO-PHARYNX. By CARL SEILER, M.D., Instructor in Laryngology and Lecturer on Diseases of the Upper Air Passages in the University of Pennsylvania, etc. Third Edition, thoroughly revised and greatly enlarged. With 2 lithographic plates containing 10 figures, and 101 wood engravings. 8vo, pp. xii—573. Philadelphia: Lea Brothers & Co. 1889. Chicago: A. C. McClurg & Co.

The author is a careful observer and a concise and accurate relator, and, rarer still in medical authorship, a master of the difficult art of omission. The result is a handbook which will be read throughout with pleasure and profit by thousands, to whom the more exhaustive treatises are of service for occasional reference only.

Much space, proportionately, is devoted to the anatomy and physiology of the upper respiratory passages, and to laryngoscopic and rhinoscopic technique, including the various methods of electrical illumination. Preference is accorded to the electric incandescent light, which has been made available even to those not upon a regular light circuit, by the introduction of storage batteries, one of which, suitable for this purpose, is figured and described.

A new chapter on acoustics, voice production, and articulation, imparts a halo of originality to this part of the volume and is especially acceptable, inasmuch as the author is known to be one of few laryngologists qualified to discourse on this part of the subject.

No one section better illustrates the general character and scope of the work than that on "Hypertrophy of the Tonsils," in which three varieties are described, the ordinary soft tonsil of childhood; the scirrhous tonsil of young adults; and the so-called ragged tonsil. So much nonsense

has been informally promulgated concerning the operation of tonsillotomy that we quote the following passage from this authority: "The best and most satisfactory way of treating hypertrophied tonsils is to cut them off as close to the pillars of the fauces as possible," which calls to mind also a recent dictum by Mr. Lennox Browne, "Chronic enlargement of the tonsils is only to be treated satisfactorily by the one method of excision, and there does not appear any valid reason why there should be two opinions on the subject." This author recommends the tonsillotome for the soft tonsil and the cold-wire snare, to avoid hæmorrhage, for the scirrhus variety. Cautery-puncture is advised only for the ragged tonsil. Total extirpation or enucleation is both unnecessary and dangerous.

The ordinary forms of chronic pharyngitis such follicular pharyngitis and pharyngitis sicca are summarily dismissed as symptomatic expressions of pathological states elsewhere. It were better even as symptoms to give them more extended notice.

"Functional Disorders of the Larynx," "Laryngeal Neoplasms," "Atrophic Nasal Catarrh," and "Hay Fever," are intelligently summarized, while "Catching Cold," "Clergyman's Sore Throat," "Laryngitis Phthisica," "Chronic Nasal Catarrh," and "Tumors in the Nasal Cavities," are adequately treated and embody many original views and valuable suggestions.

W. E. C.

MISCELLANY.

THE MEDICAL SOCIETY OF NEW JERSEY will hold its next annual meeting in the Coleman House, at Asbury Park, on June 18 and 19, 1889, commencing at 4 P.M. of Tuesday, June 18. President, H. Genet Taylor, M.D., Camden; Secretary, William Pierson, M.D., Orange, N. J.

THE NORTH TEXAS MEDICAL ASSOCIATION will hold its next semi-annual meeting in the city of Paris, Texas, beginning Tuesday, June 11, 1889, and continue its sessions for three days. The meeting will be called to order promptly at 3:30 o'clock, P.M. In addition to the subjects announced in the programme many interesting volunteer papers have been promised. It is requested that every one who may have a contribution for this meeting will upon his arrival promptly hand the title of his paper and his name to the Secretary, Dr. Geo. R. Clayton, so that it can be properly classified in its appropriate Section and come up in its regular order. The meeting in Paris promises to be one of the most attractive and successful the Association has ever enjoyed. Some distinguished visitors are expected to be present.

LETTERS RECEIVED.

Dr. S. W. Williston, New Haven, Conn.; P. R. Cortelou, Marietta, Ga.; Dr. L. Woodruff, Alton, O.; Dr. C. F. Barker, Newport, R. I.; Baker, Collins & Co., St. Paul, Minn.; J. W. Clarke, B. W. Smock, Louisville, Ky.; State Journal Co., Lincoln, Neb.; Dr. Chas. C. Browning, Adrian, Ill.; Dr. R. Harvey Reed, Mansfield, O.; Dr. F. Allport, Minneapolis, Minn.; Dr. W. M. Sprigg, Washing-

ton; Dr. L. W. Steinbach, Philadelphia; Miss Julia B. de Forest, Cold Spring Harbor, L. I.; Dr. H. Isaac Jones, San Francisco, Cal.; Dr. Thos. W. Kay, Baltimore; M. E. Gaillard, New York; Dr. E. H. Pomeroy, Calumet, Mich.; Dr. H. J. Caldwell, Adel, Ia.; Dr. W. N. Simmons, Burlington, Vt.; Dr. C. O. Cooley, Madelia, Minn.; Dr. W. M. Moore, Paris, Tex.; Dr. F. Brother, St. Louis; Dr. H. Doe, Lyons, France; Dr. B. M. Ricketts, Cincinnati, O.; L. Hibbe, New York; Dr. Wm. B. Canfield, Baltimore; C. W. Franzoni, Washington; Dr. A. Parker Champlin, Ship Island, Miss.; B. Coryell, Chesaning, Mich.; W. P. Jones, Burlington, Vt.; Lambert Pharmacal Co., St. Louis; Frank, Kiernan & Co., New York; Dr. E. Chenerly, Boston; Dr. A. R. Burton, Princeton, Ind.; Upjohn Pill and Granule Co., Kalamazoo, Mich.; Parke, Davis & Co., Detroit; Dr. L. S. McMurtry, Danville, Ky.; Dr. John M. Batten, Pittsburgh, Pa.; Dr. W. D. McCan, U. S. A., Fort Crawford, Col.; J. W. Parsons, Omaha, Neb.; J. H. Bates, New York; Dr. Louis A. Kengle, San Francisco; Dr. Geo. F. Cook, Oxford, O.; Dr. Jno. G. Ames, Palatka, Fla.; Long Island College Hospital, Brooklyn, N. Y.; P. V. Dolon, Washington; W. E. White, Burlington, Vt.; Dr. S. G. Webber, Jamaica Plain, Mass.; Fairchild Bros. & Foster, New York; Dr. M. A. Olive, Meridian, Tex.; Henry Liddell, Washington; Dr. Frederick E. Hyde, New York; Dr. Clark Gapen, Omaha, Neb.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 18, 1889, to May 24, 1889.

Major William H. Forwood, Surgeon, leave of absence granted on surgeon's certificate of disability, in S. O. 35, Dept. of Dakota, April 8, 1889, is extended one month on surgeon's certificate of disability, by direction of the acting Secretary of War. Par. 13, S. O. 118, A. G. O., Washington, May 22, 1889.

Major Passmore Middleton, Surgeon, will, as soon as practicable after his arrival at Ft. Trumbull, Conn., proceed to Ft. Warren, Mass., and report for temporary duty until the return of the post surgeon from detached service with batteries of the Fourth Artillery ordered to Atlanta, Ga. He will then return to his proper station (St. Francis Bks., Fla.). Par. 2, S. O. 113, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, May 18, 1889.

Capt. Aaron H. Appel, Asst. Surgeon, leave of absence granted in S. O. 38, Div. of the Missouri, April 16, 1889, is extended twenty days, by direction of the Secretary of War. Par. 2, S. O. 114, A. G. O., Washington, May 17, 1889.

Capt. William Stephenson, Asst. Surgeon, granted leave of absence for four months, with permission to go beyond sea, by direction of the Secretary of War. Par. 15, S. O. 114, A. G. O., Washington, May 17, 1889.

First Lieut. Ogden Rafferty, Asst. Surgeon, granted leave of absence for one month. Par. 3, S. O. 29, Hdqrs. Dept. of Texas, San Antonio, Tex., May 13, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending May 25, 1889.

P. A. Surgeon L. G. Heneberger, detached from the "Thetis" and ordered to the "Iroquois."
Asst. Surgeon F. A. Hesler, promoted to be Passed Assistant Surgeon in the U. S. Navy.

CORRIGENDA.

In the report of Dr. Wm. H. Welch's paper on "Hydrophobia," published in THE JOURNAL of May 18, occur the following errors: Page 691, col. 1, line 23 from top, read Zagari, instead of Lagari; Page 691, col. 1, line 21 from bottom, read milk, instead of neck; p. 691, col. 1, line 15 from bottom, read nerves, instead of nerve; p. 691, col. 1, line 13 from bottom, insert *only*, after multiplication; p. 692, col. 2, line 15 from top should read, "Dr. Welch collected from Pasteur's reports for 1887 and the first half of 1888," etc.

THE

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, JUNE 8, 1889.

No. 23.

ORIGINAL ARTICLES.

MEDICAL EDUCATION, AND THE LAWS REGULATING THE PRACTICE OF MEDICINE IN TURKEY.

BY THOMAS W. KAY, M.D.,

EX-SURGEON TO THE JOHANNITER HOSPITAL, BEIRUT, SYRIA.

While the present cry for higher medical education is going on, it may be profitable to consider what is being done in that line in other countries. The condition of medicine in England, France and Germany is well known to most of us; but we are comparatively ignorant of what is being done in Turkey, a country containing an area of about 1,700,000 square miles, and having some 45,000,000 inhabitants.

Its medical practitioners are derived from both native and foreign schools, the latter being represented by both Europeans and Americans. All persons holding foreign diplomas must present them at Constantinople to their respective consulates; where, if from reputable colleges, they are viséd by the minister. They must then present themselves at the Imperial Medical School, and pass a colloquium in French or Turkish, or through an interpreter, before three or more of the professors, satisfying them that they are physicians, and the rightful owners of the diplomas.

The colloquium is short but thorough, and one is treated with the greatest respect. No distinction is shown between American and European graduates, though this is the only place in Europe where such is the case. The short and imperfect courses of many of our medical colleges are only too well known abroad, and as a consequence of this, the average American M.D. has little or no standing with European physicians. The American dentist, on the contrary, stands at the head of his profession all over Europe. The colloquium costs about \$35, and a permit is given which authorizes its holder to practice medicine in all parts of the Turkish Dominions.

More is required of Turkish subjects who return from America with medical diplomas, and they are obliged to pass as rigid an examination as the students of the Imperial School. In some cases a year or more must be spent in study before

they can pass. The justice of this distinction will be readily seen when we reflect for a moment on the requirements of the respective schools. Legally, no one can practice medicine in Turkey without a diploma or permit from Constantinople; but there, as in most countries, we find more or less bribery, and in many out of the way places the law is disregarded.

In the whole Turkish Empire there are only five institutions in which there is any teaching of medicine, and in only two of these are diplomas given.

The Imperial Medical school of Constantinople was founded in 1833 by the Sultan Mahmoud. It has a six years course, an average class of 450, and, since its foundation, has had some 1,400 graduates. The faculty consists of twenty professors, at the head of which is Dr. Marco Pasha, one well fitted for the important position he holds.

The Cairo School of Medicine is several years older than that of Constantinople, having been founded in 1827, under the reign of Mohammed Ali, at Abu-Zabel, from which place it was removed to Cairo. It has a preparatory course of one year, and a medical course of five years of eight months each. Its classes vary in size from 160 to 200, and its graduates average yearly about twenty. There is a Director, Dr. Issa Pasha Handy, and twenty professors connected with the Cairo School. Its diplomas can be used only in Egyptian territory and, should its graduates wish to practice in any other part of the Turkish Empire, they must first pass a colloquium at Constantinople and obtain a permit as in the case of graduates of foreign colleges.

The Syrian Protestant College at Beirut established a medical department twenty-two years ago, since which time it has graduated 105 students. There are five professors and a President, and its course is four years. The Government permits it to give only a certificate to its graduates stating that they have followed the regular course and have successfully passed their examinations. This, when presented at Constantinople, entitles its holder to an examination at the Imperial Medical College, after passing which he receives his diploma.

There are two other institutions which have tried, but in vain, to get some recognition for

their medical departments from the Government. They are the Central Turkey College at Aintab, and the Jesuit College at Beirut—both, like the Syrian Protestant College, missionary institutions.

All efforts aimed at the Mohammedan religion are aimed at the Turkish Government, hence she justly guards her country against all missionary institutions, but especially medical colleges, for the influence of the medical missionary is greater than any other.

The standard of medical education is set by the Constantinople School, and, as that has a six years course, all of the other colleges have practically the same, the discrepancy in time being made up for in the requirements for matriculation, so a description of one college will do for all.

Through the kindness of Drs. Grant-Bey and Issa Pasha Handy, of Cairo, I have succeeded in getting an accurate account of the Cairo School, so I will confine my remarks to this. A minute description of it by Dr. Grant-Bey will be found in the Arabic medical journal *Ush-Shifa* for 1888.

This school was founded by Dr. Clot, a Frenchman—afterwards the famous Clot-Bey. After him, the position of Director was held successively by Perron, Chaffey-Bey, Griesinger and others. It was in Griesinger's time and at Cairo that Bilharz discovered the parasite bearing his name. At first, the lectures were delivered in French and translated into Arabic for the students, who studied the French language at the same time. The European professors have been gradually supplanted by natives, till now only one remains. At the same time text-books were being written or translated into Arabic, so that at present all teaching is done in that language. Since British influence has been so great in Egypt, a professor of English has been appointed; and each medical student, in addition to his own language, must have a knowledge of either English or French. The building for the School of Medicine is quite new, with all modern conveniences, and attached to this is, 1, a Museum of Pathological Anatomy; 2, Bacteriological Laboratory; 3, Laboratory of Practical Chemistry; 4, Laboratory for Microscopy; 5, Museum of Zoology and Comparative Anatomy; 6, Museum of Mineralogy and Geology; and 7, Collection of *Materia Medica*.

Near the medical building is a large hospital with an average of 400 patients, the clinics of which students of the second, third and fourth years are required to attend. Those of the fifth year are attached to the Hospital of qasr-el-Ainy, as externes and internes, while preparing for their final examinations.

In connection with the medical school is a school of pharmacy and a school of midwifery; the latter, however, because of social and religious prejudices, is lacking in practical training. The course for each of these schools requires four years for its completion.

All applicants for matriculation must be 16 years of age, and present certificates as to moral character and preliminary training, and they must pass oral and written examinations in Arabic, English or French, history, geography, arithmetic, cosmography, geometry, algebra, physics, chemistry and natural history.

Physics. This is studied in the preparatory year, 96 hours being devoted to didactic, and 192 hours to laboratory work. Chemistry is taught during the preparatory and first years, 96 hours being devoted each year to theoretical and practical work.

Natural history extends through the preparatory and first years, 96 hours being devoted each year to theoretical and practical work.

Physiology is taught the first and second years, during the first there being 96 hours of didactic, and 64 hours of practical work; and during the second year 96 hours of didactic and 192 hours of practical work. Micrography is also studied during the first and second years, there being 64 hours of didactic and 128 hours of practical work each year.

Anatomy extends through the first and second years, there being 96 hours of didactic and 192 hours of practical work each year. Each student is also required to dissect an entire human corpse his first, and the same his second year.

Pathological anatomy is studied during the third year, there being 128 hours of didactic and practical work.

Internal pathology is taught the third and fourth years, 96 hours being devoted each year to the subject, each student being instructed practically in the various modes of diagnosis, and the holding of autopsies. Surgery is taught during the third and fourth years, 96 hours being devoted each year to its study; the third year being chiefly didactic, and the fourth clinical surgery.

Operative surgery is taught the third year, there being 96 hours devoted to its theory and 64 hours to its practice. Each student must perform the operations on the cadaver and on the mannikin.

Materia medica is taught during the third year, 96 hours being devoted to the subject.

Obstetrics is taught during the fourth year, 96 hours being devoted to the didactical part and demonstrations on the mannikin. When cases occur in the hospital the students are required to be present.

Ophthalmology. Ninety-six hours are devoted to this during the fourth year, and are composed of lectures and demonstrations, most of the practical work being done at the hospital clinics.

Hygiene is also studied during the fourth year, having ninety-six hours devoted to it.

Legal medicine is studied the fifth year, 96 hours being spent in theoretical and practical work.

Pharmacology is also studied the fifth year, 96 hours being devoted to didactic and 192 hours to

practical work, the students having to assist in the pharmaceutical course. As yet, no chairs have been created for gynecology and pediatrics; the one being included under surgery, and the other under internal pathology.

Examinations are held at the end of each year on all that has been studied, and four final examinations are held at stated periods. These examinations are oral, written and practical; the student being required to examine and diagnose, in the presence of the examiners, two cases of internal disease, two cases of diseases of the eye, and two specimens of pathological anatomy with the microscope. Should he answer less than two-thirds of all the questions, or should he get zero on any one subject, he will be rejected.

The Board of Examiners for admission to the study of medicine is composed of the professors of the College, with four others appointed by the Minister of Public Instruction.

For the yearly examinations a Board of Examiners is chosen by the Government Medical Department and the Minister of Public Instruction, who act conjointly with the professors of the College. These examiners are chosen from medical men in the employ of the Government and private practitioners, all of whom have equal rights in voting, which insures a rigid and impartial examination.

Does not a system like this, in a country which labors under as many disadvantages as Turkey, put to shame many of our medical institutions in America?

TEMPERAMENT.

Read before the Denver Medical Association, and Arapahoe County Medical Society.

BY S. EDWIN SOLLY, M.D.,
OF COLORADO SPRINGS, COL.

What is it? To most of us it is a certain though ill-defined factor to be reckoned with in our dealings mental or physical with our fellow man.

In our efforts to exert an influence over one another, in religion, in politics, in trade, in education, and in disease, we all feel that this nebulous something has to be taken into account.

It appears as the resultant of various forces in the individual, and gives distinction and point to the character, in short, individuality to the individual. It is shown in the bone, in the outline, the motion, the thought, and the temper. The name implies that it is the tempering and mixing of different characteristics or qualities together, rather would it seem to be the resultant produced from the convergence of several forces and tendencies in the individual.

The ancient writers upon our art endeavored to explain these different underlying forces as due to certain humours, the history and description of their views is too well known for me to recapit-

ulate them here. We moderns have accepted and must still accept much of their nomenclature, but we have rejected their explanations of the causes of the several temperaments, without seriously concerning ourselves with finding new ones. A recent writer in *The Medical Record* (August 4, 1888), in reviewing two essays of Hellurg, upon temperament, says, "Physicians learn, consciously or unconsciously, to recognize temperamental differences, and to suit both manner and medicine to the fact." He further goes on to remark that the best definition has been given by Muller, who essentially describes temperament as "The reaction of the individual to his environment." In the same article Hellurg's tabular definition of temperament is presented, which is founded on the view that it is the varying strength of the reception of an impression and of the reaction of the individual to it, that distinguishes the temperament.

HELLURG'S TABLE.

TEMPERAMENT.	RECEPTION.	REACTION.
Choleric.	Strong.	Strong.
Sanguineous.	Strong.	Feeble.
Melancholic.	Feeble.	Strong.
Lymphatic.	Feeble.	Feeble.

Darwin Hudson (Johnson's Encyclopædia) defines temperament "As a mixture or tempering of the essential elements of the body, whose excess or variable quantity determines the chief characteristics of mind or physique."

What are the essential elements of the body? In the various definitions of temperament that are to be found there is always a reference to some such undefined factors as being at the foundation of the problem of temperament. Before we can build up any reasonable scheme of temperament we must clear off the wrappings and expose the root of the matter, in short we must explain what is meant by the essential elements of the body.

What is the essential quality of living matter? its power of renewal, that is, nutrition. When a portion of elementary living matter, which we term protoplasm, becomes separate and individual, as in an amoeba, what is the essential quality of its individuality? It is its capacity to receive an impression from and its power to react to its environment. This quality is exercised through nerve force. It is true that we cannot detect nerve structure, as we know it, in the dawning life of the individual, but though the localized and visible machinery, which we term nerve tissue, is not apparent, the real essential element of nerve force is undoubtedly diffused through the general mass of the individualized protoplasm, conferring on it the capacity to receive impressions, at least in an elementary manner.

The first reaction of the separate piece of protoplasm to the reception of an impression received from its environment would appear to be the formation of a cell wall, whereby it reacts to external

pressure by hardening itself superficially. Thus it defines its individuality and protects itself in the exercise of its essential function of nutrition, which function consists of the importing of raw material for food and the manufacture of it into the structure of the individual. The first evidences of a nervous system show that it is used to receive and react to impressions made from without; the passing food is drawn in when reflex action is developed by the impression received from without.

Thus we see that a living individual has two essential qualities, nutrition, whereby it lives, and innervation, whereby it individualizes itself, both essential to each other.

The evolution of nutrition is, briefly, thus: Simple absorption and assimilation of food by the whole mass of protoplasm and the general excretion of its waste; then the localization of digestion in a stomach; next the carrying of the digested nutriment to remote parts by lymphatic vessels, then this circulatory process elaborated into a vascular system, with its heart or pump. Then a portion of the clear, white lymph gradually changed into red blood, then the chemical producing bodily heat. Thus the system of nutrition passes from a lymphatic, cold stage to the warm, red-blooded form animal.

The nervous system beginning in the sympathetic form, next the motor and sensory, up to its highest elaboration in the brain of man, with its power of receiving impressions without bodily contact, by means of thought.

Through innervation comes the power of reception of impressions made upon the individual.

Through nutrition the power of reacting to such impressions, the latter being exhibited immediately through its circulatory system, which in man in its most important form, with respect to the power of reaction, is sanguineous.

The essential difference in reception is in speed, and, therefore, the two chief divisions are into quick and slow. Quick reception may be best called "nervous;" slow, "phlegmatic."

The essential difference in reaction is in strength, therefore the chief division is into strong and weak. Strong reaction may be called "sanguineous;" weak, "lymphatic."

Thus temperaments should be primarily divided into those of quick reception, nervous, and those of slow, phlegmatic, those of strong reaction, sanguineous, and those of weak, lymphatic. But as each individual has both qualities of reception and reaction, so each quality should be expressed in the name of each temperament; therefore taking these four in their main varieties of combination, we have eight different temperaments, the first of the names signifying the most pronounced of the two qualities as exhibited in the temperament.

TEMPERAMENT.	RECEPTION.	REACTION.
1. Nervo-sanguineous.	Quick.	Strong.
2. Nervo-lymphatic.	Quick.	Weak.
3. Phlegmo-sanguineous.	Slow.	Strong.
4. Phlegmo-lymphatic.	Slow.	Weak.
5. Sanguineo-nervous.	Quick.	Strong.
6. Sanguineo-phlegmatic.	Slow.	Strong.
7. Lympho-nervous.	Quick.	Weak.
8. Lympho-phlegmatic.	Weak.	Weak.

No mention has been made of a normal or balanced temperament, as it was styled by Galen, it being an ideal not met with in real life. The nervo-sanguineous, or perhaps rather the sanguineo-nervous, would be nearer to it, that is with respect to quality, though it may not be in regard to quantity. That is, it is normal when the reception of an impression is in proper degree to the cause. For instance, a normally nervous person, when angered with sufficient cause, would not let his passion run riot, but would fit it to the occasion, while the abnormally nervous person is thrown into a passion by a trifle or is over-excited by trifles. The normally sanguineous individual, when affected by disease or injury, responds by vascular excitement and perhaps even inflammation, sufficient to defend his tissue or repair the damage, and no more. The phlegmatic temperament is always behindhand in its work of reception, and is evidently a type of arrested evolution at the stage when the sympathetic and motor systems are well developed and the sensory yet incomplete.

The lymphatic temperament always lags behind in reacting to the stimulus conveyed to it through the nervous system, and may be looked upon as a type of arrested evolution at a stage when the change from white, clear, cold lymph to red, thick, hot blood is going on, but is not fully accomplished.

An individual born with a certain temperament can undoubtedly modify it considerably by force of will and education. Circumstance or disease will also modify, and permanently or temporarily change the relative force of its phenomena. Change of climate often exaggerates or diminishes certain of its manifestations. As physicians the impression made upon temperament by disease is what chiefly concerns us. The reception of the impression made by the invasion of the body by disease is quick or slow, excited or calm, according to whether the individual is of the nervous or phlegmatic, and reaction is strong or weak as he is of the sanguineous or lymphatic temperament. Thus, in the nervo-sanguineous person affected by disease the tendency is to exaggerated nervous excitement and inflammatory change. In fact, the call to arms is quick and loud, and the defense of the citadel of life is vigorous, the rapid circulation promptly expelling the offender by excretion, or, if a lodgment has been gained, building up earthworks of plastic exudation and limiting the mischief; but, like vaulting ambition, nature oft

o'erleaps herself and falls on the other side. Thus the physician may have to moderate the excitement of both nervous and vascular systems, and later, perhaps, to treat the products of over-zealous inflammation. In the nervo-lymphatic, the same excitement of the nervous system is seen, but the excretion of the *materiæ morbi* is too feebly executed and the defensive lymph changes are too slight to protect, so the disease spreads through the system with much irritation and but little inflammation; the temperature being often higher than the amount of the inflammation appears to warrant.

In the phlegmo-sanguineous individual, on the other hand, the inflammation, which tends to be great, is out of proportion to the rise of temperature and nervous irritation, which are comparatively slight.

In the phlegmo-lymphatic both inflammation and temperature, vascular excitement and nervous irritation, are slight, and fail to reveal the amount of damage done by disease, the progress of which, when once begun, is uninterrupted by the defenses thrown out by inflammation. Knowing the temperamental type of a patient, we can explain and allow for many of the incongruities of pulse, temperature, and nervous phenomena that we meet with.

How are we to diagnose the temperament? Is the individual plethoric or anæmic in appearance? finely chiseled in feature and small-boned, or coarse in outline and large-boned? is he mentally quick or slow in conversation, and nervous or phlegmatic under our examination? is his view of his case exaggerated in its despondency or cheerfulness? Does his history show a tendency to inflammation or to passive congestion? Is he inclined to fever? Does he react quickly to cold? Are his feet usually warm? These, suggestively, are some of the observations and questions which will give us the material for classifying a patient's temperament.

The old classification of temperaments into hot and cold suggests the sanguineous or hot and full-blooded, the lymphatic the cold and thin-blooded. The old forms of dry and moist are suggestive of the nervous and phlegmatic, high nerve tension and dryness being necessarily allied, while moisture and low tension are equally inseparable.

If Hellurg's table and the one herewith presented are compared, the first four temperaments are identical except in name. The nomenclature suggested is somewhat cumbersome, and if it could be lightened without losing the advantage of the name conveying the meaning and the dual nature of the temperament, it would doubtless be better. The chief advantage, if the previous premises are accepted, is that the meaning and the name are linked together, instead of, as in other titles, the meaning being open to various

interpretations and merely suggestive of ancient physiological errors and not of the underlying and causative physical facts.

These definitions admit of subdivisions if needed to describe particular temperamental peculiarities, as in the nervous system when the mental, motor or sympathetic systems appear most prominent in excess or deficiency of action; or with respect to special phenomena of nutrition as exhibited in the working of a special organ, as the liver, stomach, etc. All these, however, will be found to ultimately range themselves under the divisions here given. Diatheses which are pathological temperaments, and excess or deficiencies of function dependent upon pathological changes, are not here considered.

In presenting this plea for placing the rational consideration of temperament among the scientific means at our command for forming a diagnosis and conducting a treatment, I desire to do something towards a revival of the study of the physiognomy of the diseased person. In the proud possession of our arms of precision and our more scientific knowledge of disease, we modern Æsculapians have too much neglected what might be deemed the observing of the *tout ensemble* of our cases; a valuable aid to diagnosis which, from their very poverty of resources, our parent leeches cultivated with success, whilst we, through our comparative richness of weapons, have too much neglected.

Therefore let us be ambidextrous, and while in one hand we bear to suffering humanity the fruits of our knowledge of disease, in the other let us carry those gathered from our study of the individual.

EXTRA-UTERINE PREGNANCY. OPERATION. RECOVERY.

Read at the Regular Meeting of the Philadelphia County Medical Society, April 10, 1889.

BY E. P. BERNARDY, M.D.,
OF PHILADELPHIA.

On the morning of November 15, 1888, I was requested to see Mrs. F., who had been taken suddenly with a sharp agonizing pain in the abdomen; the pain came on while in the yard, and it was with the greatest difficulty she was brought to her room. I saw her very shortly after, and found her suffering from shock: pulseless, upper and lower extremities cold, face pinched, complaining of pain in the left side of the pelvis; hot bottles were placed at her sides and feet; $\frac{1}{4}$ grain, of morphine sulphate every fifteen minutes until relieved of pain; same evening pains somewhat easier, but have now assumed a colicky nature; found the menses had been arrested since September 13, 1888. Suspected intra-uterine pregnancy.

November 16. No sleep during the night, col-

icky pains all night, has recovered from the shock. Obtained the following history: Age 34 years. Married twice; four children by the first husband, none by the second; there seems to be a somewhat obscure history of gonorrhœal infection by the first husband; has been married eleven years to the second husband; has never missed her menses until at the time above stated.

The day previous to falling sick she carried up to the third-story room two buckets of coal; went to bed not feeling well; was taken, as stated above, with a sensation of something tearing in the abdomen, followed immediately by agonizing pelvic pain and collapse. Diagnosed ruptured tubal pregnancy.

17th. Vomiting the morphine; changed to rectal suppositories of ext. opii, gr. j, every two or three hours. Warm poultices over abdomen. Vaginal examination revealed a large and sensitive tumor on the left side and back of the uterus, so painful that the most careful examination elicited cries of pain.

From 18th to 25th all acute symptoms abated, the patient recovering her strength. On the 25th show of blood from the vagina, which continued for nearly two weeks; free from pain during the day, but at night is kept awake with colicky pains in the abdomen; pain extending down the left leg.

26th. Again made a careful examination; found a large, extremely sensitive tumor on the left side of uterus, somewhat to the back, throwing the uterus, which was enlarged, forward. Hinted the propriety of a consultation.

December 10. A large mass passed from the vagina, which was attended with expulsive pains, leaving the patient to suppose that she had aborted. It looked like the after-birth, was the remark of the patient. Unfortunately it was thrown away, as of no consequence, and I did not see it. The patient was hardly free of pain; walking or any sudden movement would bring on pain; loss of sleep.

23d. She called at my office, and after examination I informed the patient that her only chance was an operation, and desired further professional advice.

26th. Case examined by Dr. J. Price.

Operation December 29, 1888. Present: Professor Agnew, Drs. Levis, M. Price, Kynett, E. P. Bernardy. Operator, Dr. Joseph Price. The usual abdominal incision was made, and the abdominal cavity opened. Ruptured left tubal pregnancy. The left appendages filled the pelvic basin, the primary rupture having occurred between the folds of the broad ligament, with secondary rupture into the peritoneal cavity. General firm adhesions. The pelvis was emptied of clot, the placenta and membranes coming away in the tube, the right tube was diseased; hydrosalpinx; it was removed. Irrigation and glass

drainage. The patient is now entirely well; with the exception of a somewhat prolonged shock following the operation, there was no bad symptom.

The first natural question will be, Why was not the operation performed sooner? For two reasons: First, the patient rallied well from the first shock, there was relief of the acute pain and general improvement of health; the second reason, if I had suggested an operation at the first I would have undoubtedly been discharged. Feeling confident of my diagnosis, I made it my duty to gradually educate my patient up to the point of operation. When it was decided to operate I simply notified the patient she would be operated on within the next twenty-four hours.

The history was a typical one of an extra-uterine; hardly a symptom, as laid down in Parry's book on "Extra-uterine Pregnancy," was lacking, and any mistake in the diagnosis could only have been made through gross negligence.

DR. J. M. BALDY: A great deal has been said in regard to the influence of gonorrhœa in the causation of various affections. I notice that Dr. Bernardy has made it a prominent feature in his case; I would ask if he insinuated that the extra-uterine pregnancy was due to the attack of gonorrhœa?

DR. E. P. BERNARDY: I mentioned gonorrhœa simply as one feature in the history of the case. From the extensive disease in the opposite tube, I think there is reason to believe that the attack of gonorrhœa was at the bottom of the extra-uterine pregnancy.

DR. G. G. DAVIS: The question of the ligature coming away is one that is applicable to general surgery as well as to special abdominal work. There seems to be a tendency to attribute the trouble to the large size of the ligature. That a large knot or a large thread would give trouble where a small one would not is no doubt true, but I do not think it proper to attribute all the bad results to the size of the thread. Where pus follows the application of a large thread, it does not necessarily follow that the thread is the cause of the pus. It is well known that it is extremely difficult to cause pus by placing foreign bodies in healthy structures. If the bodies are infected it can be readily done. In the case referred to by Dr. Price the question might arise whether or not the trouble with the large ligature was due to its being infected, while the small ligature was not. Many years ago I saw Mr. Thomas Smith, in St. Bartholomew's Hospital, use silk to tie arteries. Some would suppurate and others would not. This was in the time of carbolic acid. There can be no question that the more correct are the antiseptic precautions, the greater the proportion of cases in which the silk ligature, whether large or small, will remain harmless and be covered with lymph.

DR. JOSEPH HOFFMAN: In my case of extra-uterine pregnancy I simply found a mass in the pelvis and recognized the importance of its removal. The history agrees closely with that given by Dr. Bernardy, although there was no history of gonorrhœa and no long preceding period of sterility. The case was a terrible one. I never saw such a mass of matted abdominal contents. The tube of the opposite side was so adherent to the intestine that in its separation the bowel broke. The gut was resected and dropped. The patient made an uninterrupted recovery.

DIGITAL DIVULSION OF THE PYLORUS FOR CICATRICAL STENOSIS.

Read before the American Surgical Association, May 15, 1889.

BY J. M. BARTON, M.D.,
OF PHILADELPHIA.

Digital divulsion of the pylorus for cicatricial stenosis as first practiced by Prof. Loreta, of Bologna, Italy, in 1882, has scarcely received the attention which I think it deserves anywhere except in Italy. The mortality from the twenty-five operations which I have succeeded in collecting is not great, when we consider that every successful case is a patient rescued from certain and by no means distant death, and this mortality is already decreasing.

The cases in which the operation would be of service are not so rare. When searching the journals for records of such operations, I found the reports of the presentation of many specimens of cicatricial stenosis of the pylorus to various pathological societies. My own experience has been limited to two operations. Even the first, though it proved fatal on the fourth day, encouraged me to operate again, as I was fully satisfied that had it been performed earlier, when the patient was stronger, there was no reason why it should not have been successful.

My second case has the following history: Mrs. G., æt. 48 years, a patient of Dr. Adams, of Vineland, N. J., was first seen by me at her home near Vineland, in December, 1888. For convenience of study and operation, I admitted her to Jefferson College Hospital in January, 1889. During 1884, 1885 and 1886, she had suffered from gastric ulcer. She had pain and vomiting immediately after eating, the vomiting occurring as often as six times in the twenty-four hours; she lost greatly in weight and had two severe hæmorrhages. In 1887 all of the symptoms left her, and for the greater part of the year she enjoyed excellent health, weighing in January, 1888, 143 lbs., which was more than she had ever weighed in all her life. During 1888, she became very ill with symptoms of pyloric obstruction, and lost

flesh rapidly, weighing after her admission to the hospital (January, 1889) only 93½ lbs. She then vomited but once in twenty-four or forty-eight hours. This occurred when she laid down at night and was not accompanied by nausea. It was usually from 1½ to 2 quarts in quantity and measured nearly, and sometimes quite, as much as all the nourishment taken since the preceding act of vomiting twenty-four hours before. Many articles taken during the day could be recognized; indeed, she stated that she had occasionally been able to recognize articles eaten as long as two weeks before. As she took her meals she felt that the stomach was becoming more and more distended, and when she laid down at night, gravity brought the contents of her stomach into her throat and they were then vomited. Her bowels were obstinately constipated, acting only once in twelve or fourteen days, and then only after frequently repeated large injections; purgatives administered by the mouth producing no effect. She had lately been able to occasionally feel a small tumor, about the size of a hazel nut, 2 inches to the right of the umbilicus and situated quite deeply. Her stomach was greatly enlarged; distended by the carbonic acid gas developed from half of a soda powder, it reached as low as the umbilicus and as far as the small tumor, though we could not say that the tumor was connected with the stomach. The vomited matters separated themselves into the usual three layers, the middle one being quite clear. They were nearly free from undigested food and not offensive; free hydrochloric acid, though searched for, was not found.

The operation was performed in the presence of the class of Jefferson Medical College, February 16, 1889. The surface of the abdomen had been prepared the day before, the mercurial dressings being still on when the patient was brought into the amphitheatre. Her stomach had been washed out on the morning of operation with a solution of biborate of soda. This had been repeated until the fluid returned quite clear. Chloroform was used as the anæsthetic in preference to ether, as being less apt to be followed by vomiting. The hands and instruments having been prepared with antiseptic solutions, I made a median incision through the skin about 4 inches long, terminating at the umbilicus. The peritoneal incision, however, was only 3 inches in length. There was but little bleeding, and it was readily controlled by clamp forceps.

The dilated stomach was found directly beneath the incision. The juncture of the stomach and duodenum, even from the outside, was markedly contracted and irregular on its surface. There were no adhesions and there was no tumor. The tumor was found to be a hard scybalous mass in the ascending colon, which also contained quite a number of smaller masses of hardened fæces. As the wall of the stomach, 3 inches from the pylo-

rus, felt quite healthy, I folded it transversely midway between the greater and lesser curvatures, and with a pair of sharp scissors made an incision between $1\frac{1}{2}$ and 2 inches in length. There was no bleeding requiring attention. I introduced my index finger through the incision and felt the pylorus contracted to about the size of a No. 10 French catheter. Its margins were quite hard and fibrous. As the fingers would not enter, the blades of a small uterine dilator were guided by the finger into the contracted pylorus, which was then readily dilated until it admitted the index finger. With the aid of a pair of œsophageal forceps it was still further dilated until both the index and middle fingers were admitted, the two fingers were then separated about $\frac{1}{2}$ inch, when I ceased, feeling that further effort would probably rupture the mucous membrane. This dilatation gave to the pylorus a circumference of $4\frac{1}{2}$ inches.

The mucous membrane of the stomach at the point of incision was brought together by a continuous silk suture, and the serous coat by a continuous Lembert suture, also of fine silk carried in an ordinary sewing needle. This suture was introduced deeply into the muscular coat in order to obtain a firm hold; even then it tore out at one or two points, requiring an interrupted suture to be used at those places. When the finger was first introduced into the stomach it caused some retching, forcing most of the stomach out of the wound, where it was kept during the subsequent manipulations. After the wound in the stomach was closed the organ was carefully sponged and restored to the abdominal cavity. The abdominal wound was then closed and dressed in the usual manner.

The patient vomited about 4 ozs. of blood half an hour after the operation, but there has been no nausea and no vomiting since. She was nourished exclusively by the rectum until the fourth day. From that time until the fourteenth day she was fed upon peptonized milk and animal broths. After the seventh day she took from 48 to 60 ozs. of liquid nourishment in the twenty-four hours. Some solid food was given on the tenth day, and after the fourteenth day she was fed upon a carefully selected solid diet. On the thirtieth day after operation she was able to eat eggs, mutton chops, oysters, beef, chicken, lamb, potatoes, cream toast, bread and butter, milk and coffee. Her temperature has never been over 99° F. nor under 98° F. since the operation. Her bowels act naturally every day. The abdominal stitches were removed on the ninth day. On February 8, before the operation, she weighed $93\frac{1}{2}$ lbs. March 25, she weighed 110 lbs., April 15, 118 lbs.; and April 27, 122 lbs. She was able to leave the hospital April 10. She had no pain at any time and required no anodynes.

I have succeeded in collecting 25 published op-

erations. Many of these are by Prof. Loreta. I had hoped to have obtained the results in all his cases, but Dr. Peruzzi, his chief assistant, replies to a letter of inquiry that the Professor has performed in all about 30 operations, and that at least 6 more have been performed by other Italian surgeons. They were all successful when the diagnosis was correct. This would make the total number of operations about 43. The 25 operations included in my list were performed on 24 patients, one patient having been operated on twice successfully by Prof. Loreta. From the 25 operations there were 15 recoveries and 10 deaths, making a mortality rate of 40 per cent. Of the 10 deaths, 6 were due to shock, 2 to hæmorrhage, 1 to tetanus and 1 to suppression of urine. The large mortality from shock in an abdominal section performed in from half an hour to an hour, is probably due to the fact that in this, as in most new surgical procedures, the operation is postponed too long. The mortality is already decreasing. Of the first 12 cases reported, 6 recovered and 6 died; while of the last twelve, 9 recovered and 3 died. This mortality can perhaps be still further lessened by earlier diagnosis and operation, and by such methods of operation as are most quickly performed and accompanied by the minimum loss of blood.

Diagnosis.—The diagnosis can be conveniently divided into two parts; 1, to determine the existence of pyloric obstruction, and 2, to differentiate between obstruction caused by cancer and that caused by cicatricial stenosis. But few of the reported cases has such a typical history as the one I have related. The co-existence of dyspeptic symptoms or of some still open ulcers complicated the diagnosis in most of the cases. I should regard as of little value some of the symptoms upon which much stress has been laid. The material vomited in some cases consisted of partly digested food, in some it was wholly undigested and offensive, while in others it consisted of well-elaborated chyme. The character of the material indicates the health and physiological activity of the stomach, but throws little light upon the condition of the pylorus. In some cases sarcinæ were present, but in many they were absent. The same may be said of starch granules, of needles of the fatty acids, of free hydrochloric acid, of pain and of other dyspeptic symptoms, which have usually existed for many years before the symptoms of obstruction occurred.

The following symptoms I would consider of value: 1. A greatly dilated stomach; 2. The vomiting of from one to two quarts of material at one time; 3. The recognition in the vomited matter of articles that have been taken many hours, days or weeks before; 4. When the act of vomiting is performed with great ease, without nausea, and the appetite is good immediately afterwards; 5. Obstinate constipation; 6. The non-effect

of ordinary purgatives; 7. A preceding history of gastric ulcer of several years' duration and temporary improvement followed by simple obstructive vomiting of well-elaborated chyme many

placed upon the detection of a decidedly enlarged stomach as this is rare, except as a result of mechanical obstruction of the pylorus.

The mere presence of tumor is almost without value in the differential diagnosis between cancer and stenosis. In the 24 cases tumor was present in 7, absent in 4, not noted in 13. A rapidly growing nodulated tumor low down in the abdomen is probably malignant. A poorly-defined tumor, not increasing in size, high in the abdominal cavity is probably non-malignant. The average duration of cancer of the pylorus is one year (Brinton); the maximum duration three years (Bartholow). The average duration of the gastric symptom in 13 of the 24 cases in which this is noted was eleven years. The history of temporary improvement is against malignant disease. In the latter stages of cancer the obstruction is often removed by ulceration and diarrhoea occurs. In the later stages of ulcer the obstruction increases and the stenosis is more obstinate.

The Abdominal Incision.—In all of the reported cases but two methods of opening the abdomen have been used. One by an incision running from 1 inch below the ensiform cartilage to the extremity of the 9th rib on the right side, a distance of about 6 inches; the other by an incision in the median line between the ensiform cartilage and umbilicus, and from 3 to 6 inches in length. The first method was used by Loreta in his earlier cases, but he now uses the latter exclusively.

The stomach wound should be made far enough from the pylorus to be in healthy tissue. If some inches from the pylorus it will be outside the zone of inflammation following the dilatation. Experimenting upon cadavers I found that separation of my fingers more than an inch caused rupture of the mucous membrane.

The stomach wound has been closed in many ways and all did well. In no case was there the slightest leakage. No case suffered from peritonitis and in none was the stomach wound the cause of death. I would suggest that probably the best method would be a continuous suture of catgut to the mucous membrane and the suture of Appollito to the peritoneum.

Diet.—In some of the reported cases food has been given as early as a few hours after the operation, without injury. I delayed until the fourth day, although I see no reason why food should not be given earlier. Peptonized milk, animal broths, diluted wines, and the yolks of eggs would be the best articles, according to the condition of the stomach prior to operation. Rectal alimentation will be required until sufficient food can be given by the mouth. Solid food has rarely been given before the tenth day and then sparingly.

Permanency of Cure.—Recontraction of the cicatricial tissue would naturally be feared, but Loreta, in January, 1885, nearly three years after his first

OPERATIONS OF DIGITAL DIVULSION OF THE PYLORUS FOR CIRCUMSCRIBED STENOSIS

Operator	Residence	Date	Sex	Duration of Disease	Tumor	Abdominal Incision	Result	Authority
1 Loreta	Bologna	Sept 14, 1882	47 Male	20 years	Tumor	Edge ribs	Cure 5 mos after in perfect health	Mem Acad Sci Bologna
2 " "	"	Dec 22, 1882	18 Male	7	None	"	Cure	Raccog Med, 1883, p 117
3 Giommi	Cezena	Feb 1, 1883	Female	17 years	"	Edge ribs	Death in 12 hours	Raccog Illore, March 30 1883
4 Loreta	Bologna	March 17, 1883	46 Male	"	"	"	Death in 37 hours	Lancet, Sept 1, 1883, p 376
5 " "	"	July 15, 1883	34 Female	"	"	"	Cure?	Gaz d'Esp, 1884, p 192
6 " "	Venice	June 9, 1884	26 Female	"	Tumor	Median	Cure	Bull d'Sci Med, 85, p 137
7 Loreta	Bologna	March 9, 1885	26 Female	"	"	"	Death, shock	Med News, Phila, 1, 20, 1886
8 " "	"	"	"	"	"	"	Death, shock	"
9 " "	"	"	"	"	"	"	Death, hemorrhage	"
10 " "	"	"	"	"	"	"	Death, hemorrhage	"
11 McBurney	New York	July 6, 1885	39 Female	20 years	Tumor	Edge ribs	Death, 30 hours	Annals Surgery, 1886, p 372
12 Loreta	"	July 6, 1885	52 Female	30	Tumor	Edge ribs	Suppression of urine	Annals Surgery, 1886, p 372
13 " "	"	1886	19 Female	"	"	"	"	La Riforma Med 1886 p 259
14 " "	Bologna	March 9, 1886	51 Female	5 years	None	Edge ribs	Cure well March 30 1888	Brit Med Jour, 1 eb 19, 1887
15 " "	England	March 16, 1886	33 Male	"	None	Edge ribs	Death 10th day hemorrhage	Acad Sci, Bologna, 1, 21, '87
16 " "	Bologna	May 22, 1887	58 Male	1 year	None	"	Death 4th day, exhaustion	Jour Am Med Ass, '88, p 548
17 Barton	Philadelphia	Sept 14, 1887	47 Female	7 years	Tumor	Median	Death, tetanus 3th day	Gaz d'Esp, Milan, '87, p 963
18 Loreta	Bologna	Oct 13, 1887	35 Female	5	"	"	Cure	"
19 " "	"	Oct 31, 1887	34 Male	10	"	"	Cure	"
20 " "	London	Dec 1887	34 Male	"	"	"	Cure	"
21 Freses	Bologna	Jan 30, 1888	54 Male	15 years	Tumor	Median	Cure, recontracted	Lancet Feb 18, '89 p 116
22 Loreta	"	June 20, 1888	54 Male	15	"	"	Cure, same patient, reoperation	Gaz d'Esp, 1888, p 618
23 " "	"	June 11, 1888	38 Male	20 mos	None	Edge ribs	Cure, letter from Dr Bull	"
24 Bull	New York	June 11, 1888	48 Male	5 years	Tumor	Median	Cure	"
25 Barton	Philadelphia	1 eb 16 1889	48 Female	"	"	"	"	"

* Letter to Dr Harris stating that to Nov 30 1888, he had had 9 cases, of which 5 were cured and 4 died, 3 from shock and 1 from hemorrhage

hours after taking food. This typical history occurred but twice among the 24 cases. When the symptoms are obscure great reliance may be

operation, writes, "I have now operated on 6 cases. They all have recovered, and all remain well up to the present time." Haggard, in 1888, reports that the case he operated on two years before was "still perfectly well, no vomiting, dilatation of stomach less, and she has recently married." Peruzzi, in his letter to me, March 22, 1889, states that he knows of only one relapse among the 30 cases upon which Prof. Loreta has operated. This patient was re-operated upon, recovered, and remained well.

In one of the fatal cases included in the list the obstruction was valvular, due to irregular contraction of the walls of the stomach. In another case, not included in the list as the stomach was not opened, the valvular obstruction was caused by distortion produced by external adhesions. These were divided and the patient made a good recovery. In another case, not included in the list, the operator recognizing that he had badly ruptured the mucous membrane while stretching the pylorus, immediately performed pylorotomy, with recovery of the patient. In another case the obstruction was caused by an adherent pancreas. The cause of the adhesion was an ulcer starting in the posterior wall of the stomach and penetrating the pancreas. In this case an incision about 2 inches in length was made from stomach to duodenum, passing through the pylorus. The two extremities of the wound were brought in contact and the wound sewed up at right angles to its position when made. When completed it was parallel to the long axis of the body. This patient recovered after a serious illness.

AN INTRODUCTION TO THE STUDY OF PNEUMONIC FEVER.

BY EDWARD F. WELLS, M.D.

SIXTH PAPER.

PREVALENCE—METEOROLOGY.

The relations existing between meteorological conditions and pneumonic fever are of the most interesting nature, and many and various are the rules and laws relating thereto that have been formulated by systematic writers, but the exceptions to them are so numerous and important that they are greatly weakened or rendered entirely nugatory.

It may be affirmed, as a general proposition,¹ that pneumonic fever will be found to prevail to a greater extent than ordinarily, the influence of season and epidemics excepted, when the daily range of temperature,² humidity of the atmos-

phere,³ velocity of the wind,⁴ range of barometer,⁵ amount of atmospheric pressure⁶ and amount of ozone⁷ present in the air are greater than the average, and that it will be less prevalent when opposite conditions prevail. Again, it will be found that an excess of cases will be met with when the range of temperature is low,⁸ the barometer falling⁹ and the ground water low.¹⁰

That a sudden and marked fall of the thermometer is apt to be followed by an excessive prevalence of pneumonic fever has always been recognized, but it is not at all clear how an excess of moisture can have, *per se*, any deleterious effects upon the lungs, and the proposition has been controverted by a large number of observers.¹¹ If, however, as is claimed by many, the air which, *par excellence*, is connected with the prevalences of pneumonic fever is a dry, cold one, the explanation offered by Baker¹² is at least plausible:

"If, as is believed, the air is exhaled from the lungs at nearly a uniform temperature throughout the year, and is saturated, or nearly saturated, with the vapor of water, the cold air of winter must, because of the small quantity of vapor which it contains, take from the lungs and air-passages a much greater quantity of vapor than does the warm, moist air of summer; and thus its drying and irritating effects must be much greater."

In this connection it must be remembered that during the season when pneumonic fever is rife a very large proportion of the population is cooped up in heated rooms and habitually breathe a dessicating atmosphere surcharged with carbonic acid gas.

In every locality certain winds are more likely to be followed by pneumonic fever than others. Those from the North are particularly injurious in New York,¹³ Stockholm¹⁴, on the Spanish and Ital-

Weeklb. voor Geneesk., 1855, Nr. 22-23; Rigler, Wiener Med. Wochenschr., 1858, S. 834; *et al.*

³ Baker, Proc. Mich. St. Bd. Health, Oct. 1, 1886; Seibert, op. cit.; Sanders, Am. Jour. Med. Sci., July, 1882, p. 88; Blodgett, Climatology of the U. S., Phila., 1857; Loomis, Am. Jour. Med. Sci., Jan., 1882; Storer, Sanitarian, Apr. 19, 1883.

⁴ Thomas, Handb. d. Kinderkrankh., Bd. iii, S. 597; Baker, op. cit., p. 7; Sturges, Nat. Hist. Pneumonia, p. 156; Huss, op. cit., S. 35; Seibert, op. cit.; Green, Quain's Dic. Med., p. 874; Cruvelhier, Path. Anat., Hourmann et Dechambre, Arch. Gén. de Méd., T. xiii.

⁵ Biach, op. cit.; Seibert, op. cit.; Baker, op. cit.; Masson, Am. Jour. Med. Sci., Jan., 1883, p. 261; Sanders, op. cit.

⁶ Juergensen, Ziemssen's Handb., Bd. v, S. 17.

⁷ Baker, op. cit.; Jones, Dublin Jour. Med. Sci., Feb. 1865; Draper, N. Y. Med. Rec., Sept. 19, 1885, p. 326; Seitz, Catarrh and Influenza, 1865; Masson, Inaug. Dissert., Bern, 1879. That ozone has any influence over the prevalence of the disease is denied by Ireland, Edinb. Med. and Surg. Jour., July, 1862, and Baldwin, Ohio Med. Recorder, Apr. 1878. Lépine, Pneumonie, Wien., 1883, S. 30, says that ozone is not a factor.

⁸ Bateman, Diseases of London, 1819, p. 234; Van Bibber, Jour. Am. Med. Assn., July 28, 1888, p. 111; Schützenberger, Gaz. Méd. de Strassb., 1856, No. 2; *et al.*

⁹ Seibert, op. cit.; Masson, op. cit.

¹⁰ Purjesz, Wiener Med. Wochenschr., 1884, S. 43; Juergensen, Berliner klin. Wochenschr., 1884, Nr. 17; Morehead, Diseases of India, Vol. ii, p. 308.

¹¹ Barton, Quoted by LaRoche, Pneumonia, p. 347; Tyndale, Sanitarian, May 31, 1883, p. 342; Hirsch, op. cit., S. 32; Masson, op. cit.

¹² Mich. Bd. Health Rpt., 1880, p. 449.

¹³ Seibert, op. cit.

¹⁴ Huss, op. cit.

¹ To which there are many exceptions.

² Biach, Am. Jour. Med. Sci., Jan., 1883, p. 261; Seibert, Am. Jour. Med. Sci., Jan., 1882; Berliner klin. Wochenschr., 1884, S. 294; N. Y. Med. Rec., May 30, 1885, p. 608; Hirsch, Hist. Geog. Path., Bd. ii, S. 38; Huss, Lungenentzündung, Leipzig, 1861, S. 68; Baker, Report Mich. Bd. Health, 1880, p. 445; Frank, Prax. Med. Lipsie, 1823, Lib. ii, p. 311; Howard, N. C. Med. Jour., 1859 and 1860; DeBordes, Nederl.

ian¹⁵ coast, Quito,¹⁶ England,¹⁷ Cayenne,¹⁸ and other places. North-west winds are the most deleterious in the Interior Valley of North America,¹⁹ Germany,²⁰ Marseilles,²¹ etc., and the East wind in the Levant.²²

Seibert,²³ in analyzing 600 cases, found that the barometer was falling in 461 and rising in 139. It was below the mean in 352. The temperature was below 50° F. in 506. The wind was northerly in 302 and north-westerly in 200, and the velocity more than 15 miles per hour in 406. In 550 the air was cold and moist.

There can be no doubt as to the important rôle played by meteorology in preparing either the soil²⁴ or the seed—or both—of pneumonic fever, but after examining an immense amount of facts relating to this point I am compelled to confess, with Sturges,²⁵ that I have been unable to come to any satisfactory conclusions.²⁶

CLIMATE.

Climate has always been regarded as being intimately associated with the prevalence of pneumonic fever, although the facts at our disposal do not enable us to indicate with certainty the varieties of climate which are most or least prone to influence the prevalence of the disease.

Upon this subject writers have entertained many and diverse views: Laennec was of the opinion that, in general, pneumonic fever is a disease of cold climates, and this view has been shared by others.²⁷ Sanders²⁸ considers it most frequent in warm countries, whilst others maintain that it can not be shown that the disease is absolutely more prevalent in one climate than another.²⁹

Although pneumonic fever prevails very extensively upon raw and unprotected coasts and in localities³⁰ which suffer from marked atmospheric vicissitudes, yet it does not appear that the rigorous climate of polar regions is accompanied by as great a prevalence as milder parts. Thus in Parry's northern expedition the men were sometimes exposed—in emerging from their quarters—to a

sudden change of temperature of from 80° to 120° F., yet no cases of the disease occurred.³¹ It is possible that a prolonged sojourn in Arctic regions may predispose to this and other pulmonary disorders upon a return to temperate climates.³²

Ever since Forry³³ first promulgated his theory "that in proportion as the high temperature of summer makes an impression upon the system do the lungs become susceptible to the morbid agency of the opposite season" and attempted to prove that this disease prevails most extensively in warm climates, this view has had many adherents.³⁴ Examining the facts adduced by Forry, Sanders³⁵ and others in support of the proposition it must be conceded that they are forcible and appropriate, yet when we cast our eyes over a more extensive field the puzzle becomes more complex—perhaps insoluble.³⁷ When we see localities having similar climates with widely divergent rates of prevalence, or several places with the same rates presenting opposite climatic conditions, it is evident that climate alone is not the ruling factor in the distribution of pneumonic fever.³³

SEASON.

It is the custom of writers³⁹ to say that in the northern hemisphere, pneumonic fever prevails very much more extensively in winter and spring than during the summer and autumn months, and this seems to be the only legitimate conclusion if we consult only mortality reports, but if we look at clinical reports as well we may hesitate to accept this dictum. The facts are clearly shown in the following tables.⁴⁰

During a series of 24 years there were treated in the Vienna General Hospital 12,104 cases of pneumonic fever, and of these 64 per cent. were admitted during the six cold, and 36 per cent. in the six warm months. Of 395 cases admitted into

³¹ In California the disease is noticed oftenest upon the sea-coast and the mountains where the air is cold and moist, whilst it is extremely infrequent in the warmer interior valleys where extreme vicissitudes of temperature are rare. Tyrell, *Rpt St Bd Health*, 1886, p. 66.

³² Parry's Northern Expeditions.

³³ See the experiences of the ships "North Star" and "Corwin" Rosse, *Cruise of the Corwin*, Wash., 1883, p. 12.

³⁴ Climate of the U. S., p. 246.

³⁵ See Lee, *Copeland's Med Dic*, Vol. II, p. 890; Drake, *Dis Int Val N A*, Vol. II, p. 852; Flint, *Prac Med*, 3d Ed., p. 181; Rosse, *op cit*, pp. 12-27; Loomis, *Prac Med*, N. Y., 1884; Davis, *Prac. Med*, Chicago, 1884; Fossangrue, *Dic de Méd*, T. XVII.

³⁶ *Am Jour Med Sci*, July, 1882.

³⁷ See tables 9 to 12.

³⁸ For further information consult, Rochard, *Dic de Méd*, 1865, T. VII, art. Climate; Feullet, *La Phthisie en Algérie*, 1874; Boudin, *Geog Méd*, Paris.

³⁹ Hippocrates, *Aph*, Sec III, Aretæus, *De Caus. et Sig. Acut Morb*, Lib. I, cap. X; Hirsch, *Hist Geog Path*, Ed. II, S. 29; Lebert, *Handb d Prakt Med*, Tub., 1859, Bd. II, S. 64; Sturges, *Nat Hist Pneumonia*, p. 160; Morehead *Dis India*, p. 300; Huss, *Lungenentzündung*, Leipzig, 1861; Wunderlich, *Allgem Path u Therap*, Bd. III, S. 304; Ziemschen, *Pleuritis und Pneumonie*, Berlin, 1862, S. 187; Harnernig, *Cholera Epidem*, Prag, 1850; Grisolle, *Traité de la Pneumonie*, Paris, 1841; Roth, *Wurzbürger Med Zeitschr*, 1860; Fox, *Reynolds's Syst Med*, Phil., 1880, Vol. II, p. 155; Bamberger, *Wiener med Wochenschr*, 1857; Swett, *Diseases Chest*, N. Y., 1854, p. 80; Janeway, *Phila Med News*, Dec. 8, 1853, p. 634; Williams, *Cycl Prac Med*, Vol. II, Andral, *Chin Med*, Vol. II, Peacock, *St Thomas's Hospit Rpts*, Vol. V, p. 5; Sibson, *Med Chir Rev*, 1858, p. 23, et al.

⁴⁰ The material for table 13 was obtained from a great number of registration reports, references to each of which would serve no useful purpose.

¹⁵ Hirsch, *op cit*, S. 35.

¹⁶ Chisholm, *Dis Tropical Countries*, London, 1822.

¹⁷ Sturges, *op cit*, p. 156.

¹⁸ Hirsch, I c, S. 35.

¹⁹ Drake, *Dis Int Valley N A*, Cin., 1830.

²⁰ Hirsch, I c.

²¹ Gibbs, *U S Naval Rpts*, 1881, p. 410.

²² Hirsch, *op cit*.

²³ *Am Jour Med Sci*, Jan. 1882.

²⁴ Rokitsky, *Path Anat*, Phila., 1855, Vol. IV, p. 75; Seibert,

N Y Med Rec, May 30, 1885, p. 608.

²⁵ St. George's Hospital Rpts., Vol. I, 1870, Art. X.

On account of the diffuse and contradictory nature of my

material its presentation is omitted.

²⁶ *Traité de l'Auscultation Méd*, Paris, 1819.

²⁷ Chomel, *Pneumonie*, Leipzig, 1841, S. 312; Annesly, *Diseases*

of India, Copeland, *Med Dic*, Vol. II, p. 891; Lombard, *Traité de*

Climatolog, p. 391.

²⁸ *Am Jour. Med Sci*, July, 1882.

²⁹ Ziemschen *Prager Vierteljahrschr*, 1858; Hirsch, *Hist Geog*

Path, Erlangen, 1864, Bd. II, S. 20; Juergensen, *Ziemschen's Handb*

d Spec Path u Therap, Bd. I, S. 13; Sturges, *Pneumonia*, London,

1870, p. 161, et al.

³⁰ For further --

Vol. I, p. 281,

Zunicher *Dise*

607; Loomis, *Cl*

V, p. 9.

e, *Prac Med*, Phila., 1831,

Leipzig 1861, S. 3; Weller,

don Lancet, 1857, Vol. II, p.

359; *Jour Am Med Assn*, Vol.

TABLE XIII.—SHOWING PREVALENCE OF PNEUMONIC FEVER BY MONTHS AND SEASONS.
685,566 fatal cases.

COLD MONTHS.				WARM MONTHS.			
Season.	Month.	Cases.	%	Season.	Month.	Cases.	%
Winter, 234,908 cases 34.2 per ct.	Dec. . . .	65,667	9.6	Summer, 89,731 cases 13.1 per ct.	June. . .	38,861	5.7
	January.	83,151	12.1		July... .	26,959	3.8
	Febr'y. .	86,090	12.5		August .	24,811	3.6
Spring, 245,373 cases 35.9 per ct.	March. .	89,062	13.0	Autumn, 115,554 cases 17 per ct.	Sept. . .	27,183	4.0
	April. . .	89,283	13.0		October. .	38,111	5.7
	May. . . .	67,028	9.9		Nov. . . .	50,260	7.3
Total for Cold Mos. .		480,281	70.0	Total for Warm Mos.		205,285	30.0

the Hôtel Dieu from 1831-39, 227 occurred in winter, and 168 in summer. Epidemics have generally occurred in winter and spring.

The inference to be drawn from these statistics is that pneumonic fever is markedly more fatal in winter and spring than during the warmer months, but the material at hand is too meager to statistically settle the point.⁶⁰

TABLE XV.—SHOWING PREVALENCE OF PNEUMONIC FEVER IN ADULTS AND CHILDREN BY MONTHS AND SEASON.

Month and Season.	Ziemssen, 526.				Author, 498.				Combined, 1,024.			
	Adults.		Children.		Adults.		Children.		Adults.		Children.	
	Cases.	%	Cases.	%	Cases.	%	Cases.	%	Cases.	%	Cases.	%
January. .	25	8.2	28	12.6	30	9.4	22	12.3	55	8.8	59	12.4
February. .	40	13.1	22	9.9	40	12.4	14	7.9	86	12.3	36	9.0
March. . .	54	17.8	15	6.8	48	15.0	20	11.1	102	16.3	35	8.7
April. . . .	32	10.5	23	10.3	44	13.9	30	17.0	76	12.2	53	13.2
May. . . .	23	7.5	22	9.8	10	3.1	16	8.9	33	5.3	38	9.4
June. . . .	11	3.6	24	10.8	7	1.9	6	3.4	17	2.7	30	7.5
July. . . .	18	6.0	24	10.1	6	1.9	7	3.9	24	4.0	31	7.7
August. . .	14	4.6	13	5.9	10	3.1	8	4.5	24	3.8	18	4.5
September. .	8	2.6	10	4.4	22	6.9	6	3.3	30	4.8	19	4.7
October. . .	17	5.8	9	4.0	34	10.6	16	9.0	64	11.0	28	7.0
November. .	20	8.9	12	5.4	42	13.1	16	9.0	60	11.2	46	11.4
December. .	44	14.4	20	9.0	26	8.1	26	14.5	70	11.2	46	11.4
Winter. . .	109	35.8	70	31.5	96	30.1	62	34.9	205	32.9	132	32.9
Spring. . .	109	35.8	60	27.7	102	31.9	66	36.9	211	33.8	126	31.4
Summer. . .	43	14.1	58	26.1	23	7.3	21	11.7	65	10.3	29	7.7
Autumn. . .	45	14.3	34	15.4	98	30.7	30	16.4	143	23.0	64	16.0
Total. . .	304	100.0	222	100.0	319	100.0	179	100.0	623	100.0	401	100.0

TABLE XIV.—SHOWING PREVALENCE OF PNEUMONIC FEVER BY MONTHS AND SEASON.

10,225 Cases.

Season.	Winter.			Spring.			Summer.			Autumn.		
	1658			3582			2539			2903		
	Per cent.			33.8			23.6			27.7		
Month.	Dec.	Jan.	Feb.	Mar.	April	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
Cases.	532	522	604	739	1363	1380	892	695	852	888	899	1114
Per ct. Cases.	5.3	5.2	5.4	7.2	13.3	13.3	8.6	6.8	8.2	8.4	8.4	10.9
Augusta Hosp., Berlin†.	15	33	27	38	56	53	40	47	40	41	29	22
Authoriz.	52	52	54	68	74	26	12	14	18	28	42	58
Bagninsky‡.	5	6	2	7	5	7	6	8	5	2	2	5
Bambarger‡.	14	17	25	17	17	27	10	10	11	10	12	16
Chomel§.	30	37	43	45	57	40	22	8	9	3	7	15
Doubleday¶.	38	28	23	41	31	22	15	5	5	11	13	18
Flint‡.	49	7	2	13	9	3	3	3	0	2	1	1
Friedrich, Garnison‡.	3220	301	263	302	422	410	309	237	185	179	211	224
Fritsch¶.	824	65	64	80	82	87	46	55	56	74	67	67
Gierhard§.	4	4	2	7	8	4	1	0	1	4	3	1
Grisolle†.	296	34	20	40	47	62	40	13	3	5	2	22
Hermann§.	396	34	41	58	60	57	33	23	14	17	8	20
Huss§.	2016	186	209	243	349	407	281	176	100	128	146	175
Riegel§.	119	9	26	13	11	12	8	5	5	5	2	10
Ten German Garrisonss	376	24	27	45	61	47	57	33	14	17	8	20
Weller§.	30	4	3	5	3	2	1	1	0	1	0	3
Wilbraut§.	126	8	19	21	13	11	12	5	4	5	1	12
Ziemssen§.	528	64	53	69	55	45	35	42	24	21	19	39

⁴¹ Berichte.⁴² Private records.⁴³ Pneumonie u. Pleuritis, Tübingen, 1880.⁴⁴ Wiener med. Wochenschr., 1857, S. 897.⁴⁵ Pneumonie, Leipzig, 1841, S. 311.⁴⁶ N. Y. Med. Record, March 28, 1885, p. 343.⁴⁷ Am. Jour. Med. Sci., January, 1861, p. 25.⁴⁸ Pulvermacher, Lungenentzündung, Berlin.⁴⁹ Inaug. Diss., Erlangen, 1878, S. 27.⁵⁰ Am. Jour. Med. Sci., Vol. xiv.⁵¹ Traité de la Pneumonie, p. 137.⁵² Lungenentzündung, S. 6.⁵³ Lungenentzündung, Leipzig, 1861, S. 67.⁵⁴ Wiener med. Wochenschr., 1858, S. 834.⁵⁵ Hermann, op. cit.⁵⁶ Inaug. Diss., Zürich, 1854, S. 41.⁵⁷ Inaug. Diss., Rostock, 1862.⁵⁸ Pleuritis u. Pneumonie, Berlin, 1862, S. 157.TABLE XVI.—SHOWING COMPARATIVE PREVALENCE OF PNEUMONIC FEVER BY MONTHS AND SEASONS.⁶¹

Season.	Month.	Winter.		Spring.		Summer.		Autumn.	
		Dec.	Jan.	Feb.	Mar.	April	May	June	July
Internal Dis. . .		35,711	1384	1576	1999	2765	3908	4006	6258
Pneumonic Fever.		396	41	58	60	57	33	23	14
Per cent. . . .		100.0	3.0	2.0	3.0	1.4	1.0	0.5	0.2

⁶¹ See Hermann, op. cit.

The influence of season over the prevalence of the disease varies considerably in different years and localities,⁶⁰ due no doubt to local and temporary influence. Race, sex, age, etc., influence slightly, if at all, the seasonal prevalences of pneumonic fever. The influence of age is shown in table xv.

At certain periods pneumonic fever forms a greater portion of the total morbidity than at others as shown in table xvi.

VAGINAL HYSTERECTOMY FOR CANCER.

A CONTRIBUTION TO THE STATISTICS OF THE OPERATION
BY DOCENT DR. VACLAV RUBESKA,

OF PRAG

[Translated by ARCHIPALD CHURCH, M D]

The justifiability of the above operation is even yet at times the subject of debate, but if the consensus of opinion is to the effect that complete, early removal of cancer in other localities gives the patient the best, if not the only chance for recovery, application of the same conclusion to the uterine variety seems to furnish a sound foundation for hysterectomy. The remarkable experience of Dr. Rubeska in the gynecological clinic of the Bohemian University at Prag, now for the first time published, adds much strength to this

position. Brief notes of all his cases, extending over four years, were placed in the writer's hands. Twenty-seven cases of vaginal hysterectomy for cancer without a death from the operation speaks in no uncertain terms and needs no comment.

No peculiar mode of operation was employed excepting that the stumps of the broad ligaments were drawn well into the vagina and stitched to its walls. The reason for this procedure, upon which Dr. Rubeska strongly insists, is that a recurrence of the neoplasm, by extension or otherwise, naturally occurring in these structures, will be, when this step is taken, within the range of observation and the field of subsequent operative treatment. Ovaries and tubes were not removed unless diseased. In the first three cases iodoform gauze was used for drainage, but later the peritoneum was closed and no drainage whatever employed. In other respects the operation did not differ materially from the Czerny-Schroeder method, though usually the uterus was delivered without being inverted. The cases were not selected in any sense of the word, and in one case a radical operation was impossible owing to the extensive infiltration of the surrounding structures. Almost without exception the patients were of the poorest class, making it often impossible to keep in view the subsequent course of events. Antiseptic precautions were carried out in their detail, but the

VAGINAL HYSTERECTOMY FOR CANCER

Case No.	NAME	Age	Location of Growth	Date of Operation	CURSUS MORBI	Condition of Patient July 1, 1888
1	Teresa V	48	C corporis uteri	Sept 25, 1884	Quickly recovered from operation	Is still well
2	Marie S	35	C cervicis uteri	Nov 2 1885	Recurrence of disease in three months, and death six months after operation	
3	Teresa H	36	C cervicis uteri	Nov 6, 1885	Was discharged well and lost sight of	Unknown.
4	Barbara N	42	C corporis uteri	Nov 17 1885	Discharged well and lost sight of	Unknown.
5	Teresa M	43	C cervicis uteri	Nov 30 1885	Discharged well and lost sight of	Unknown.
6	Anna A	41	C portio vaginalis	April 2 1886	Discharged well, but died from recurrence of disease in the vaginal wall at a distance from the cicatrix, which remained intact	
7	Madalene K	38	"	April 9 1886	Discharged well and lost sight of	Unknown.
8	Elenora H	63	C corporis uteri	May 15 1886	Discharged well, died six months later of pneumonia, without recurrence	
9	Anna F	47	C cervicis uteri	June 6 1886	Discharged well and lost sight of	Unknown
10	Barbara S	53	C corporis uteri	Aug 9 1886	Discharged well	Remains well.
11	Alvina N	54	C cervicis uteri	Aug 18 1886	A small urethro-vaginal fistula resulted but closed spontaneously	Remains well.
12	Frances S	48	"	Aug 26 1886	Discharged well	Unknown
13	Rozalia T	34	C port vaginalis	Nov 25 1886	Discharged well	Remains well.
14	Katerina K	34	C cervicis uteri	Dec 15 1886	Discharged well	Unknown
15	Aminda R	52	"	Jan 31, 1887	Discharged well Died of empyema April 28 1887 Post mortem the cicatrix was entirely free from carcinoma	
16	Teresa K	41	C port vaginalis	March 30 1887	Discharged well	Unknown
17	Anna P	38	"	May 28, 1887	Discharged well	Unknown
18	Anna B	53	"	June 4 1887	Discharged well	Unknown
19	C R	34	"	June 26 1887	Discharged well Operated in small country house	Remains well
20	Anna S	41	"	July 2 1887	Discharged well	Recurrence of growth
21	Marie M	58	"	July 3 1887	Thrombosis of crural and uterine veins Died from recurrence of growth April 21, 1888	
22	Marie L	50	"	July 20, 1887	Discharged well	Remains well
23	Frances B	48	"	Aug 16, 1887	Operation not radical as parametrium was widely infiltrated urethro-vaginal fistula	Left
24	Teresa F	36	C corporis uteri	Aug 18, 1887	Discharged well	Remains well.
25	Marie Z	60	C port vaginalis	Aug 28, 1887	Discharged well	Remains well.
26	Marie C	50	C cervicis uteri	Feb 23 1888	Hematuria after operation Discharged well	Remains well.
27	Katerina K	42	"	April 25, 1888	Discharged well	Remains well.

⁶⁰See Hues Lungenentzündung, S 87, see also Folkmann, Inaug Diss, Erlangen 1847 S 9

⁶¹See Coolidge Status U S Army, 1839-1855

clinic being in a portion of the general hospital, an old building leaving much to be desired from a hygienic point of view, the circumstances were

not the most favorable, and one operation was done in a small country house.

Whenever doubt existed as to the diagnosis, and as a rule, microscopical examination of the growth was made.

Of the seventeen cases treated to July 1, 1888, ten remained well after periods of 46, 23, 23, 18, 13, 12, 11, 11, 4, and 3 months respectively. Three died with recurrent cancer; two presented a recede on that date; and two had died from other diseases without any recurrence of the growth whatever. (For tabulated list see p. 805.)

3300 Cottage Grove Ave., Chicago.

MEDICAL PROGRESS.

VERTIGO OF THE STOMACH CONSIDERED OF TOXIC ORIGIN.—M. BOVET has made two kinds of investigations. First, an examination of the urine of dyspeptics affected with vertigo. Second, an analysis of the gas of the belchings so frequent at a certain stage of digestion with patients afflicted with vertigo. It is necessary to fix precisely the moment when the gaseous products are collected, for their nature differs essentially according as they form a short time after eating or from five to six hours afterwards. If the first is the case nitrogen and carbonic acid are the chief ingredients; if the latter hydrogen sulphide often is added, and sometimes an ingredient of a sulphocyanic nature, which Bovet found again as sulphocyanic acid in the urine; he thinks that this toxic product acts upon the medulla and determines the phenomenon of vertigo. Poisoning with the derivatives of cyanide produces vertigo and tingling of the ears, symptoms which are often found in dyspeptic patients. There is, consequently, good reason to believe that these organic poisons which were discovered in excess fourteen times out of the seventeen analyses of urine which Bovet made, and five times in those of the stomach gases, constitute the cause of vertigo.

Does this mean that the cyanide compound, which in its nature would be ethylaceto cyanhydric acid, a substance originating from the reduction by dehydration of ethyldiacetic acid and from the derivatives of cyanide in the urine is alone to blame? Bovet does not think so, as other substances equally poisonous were found in the urine, such as oxybutyric acid B, which originates from acetic acid, crotonic acid, diacetic acid, ethylacetic acid, and acetone, and which was discovered in certain conditions of diabetes by Külz and Minzkowsky. Lépine (Lyon) even ascribes to it the coma in diabetes. It is, therefore, possible that vertigo of the stomach is due to the presence in the organism of one of these two acids, or perhaps to the presence of some other acid of the

same kind, for through Gehhardt's reaction the same red coloring is obtained for all these substances derived from one another. As to the sulphocyanic acids and the ethylaceto cyanhydric acid in the urine of vertigo patients Bovet was able to prove after distillation the mixed reaction of these two substances which, moreover, had a distinct smell of prussic acid. Although making certain reserves regarding the nature proper of the acid found in the urines, or in the alkaline solution in which Bovet collected the gases from the stomach, he thinks that this acid acts by intoxication. For inasmuch as it belongs to the hydrocyanic or butyric series, its toxic power is the same and, consequently, its effects are identical. More investigations will be necessary to elucidate this point.—*La Semaine Médicale*, No. 18, 1889.

CONTAGIOUS CHARACTER AND TRANSFERABILITY OF CANCER BY INOCULATION.—DR. ARNAUDET has published the statistics of a district in La Normandie afflicted with cancer, from which he draws the following conclusions:

1. Cancer prevailed with excessive intensity in this part of La Normandie; there exists consequently a local cause.

2. Clinical results justify the declaration that carcinoma is infectious and may be transmitted from one individual to another.

3. As in typhoid fever, so in cancer, the water is ordinarily the vehicle of the characteristic microbe, in our district probably the cider.

4. All water coming from pools, and all impure water in general should be excluded from the fabrication of cider.

5. Our knowledge of this disease makes it our duty to destroy as far as possible all morbid products of our sick (vomited matter of cancer patients, sputa of patients with phthisis, stools of typhoid patients, etc.) Where a more powerful antiseptic is lacking, boiling water is always obtainable.

Arnaudet makes these observations: The specific microbe has not yet been found, and experiments on animals have not led to any positive results. Experiments on man can neither be excused nor advised, but it is well to remember the case of the famous dermatologist Alibert, an opponent of contagion, who died from cancer after having inoculated himself with the juice of an encephaloid, thus proving the very theory which he wished to disprove.

It seems proven that physicians and surgeons pay a greater tribute than the rest of mankind to this terrible malady with which they have to struggle so often. English journals have reported several observations of direct contagion: a cancer of the penis in a man whose wife had a uterine tumor; specific ulceration of the hand and tumor of the arm-pit in a woman who took care of her mistress, the latter being affected with carcinoma

of the breast, the woman had also been washing the linen of her mistress, etc.

Assuredly more material will be necessary to establish all these ideas beyond a doubt, but already the day may be looked forward to—perhaps it is not distant—when like tuberculosis, cancer will fall from the rank of diatheses to that of a simple local disease with external causes.—*L'Union Médicale*, No. 52, 1889.

ON SURGICAL INTERVENTION IN TUBERCULAR PERITONITIS.—It has often happened and still happens that after diagnosing an abdominal tumor the abdomen is opened and tubercular peritonitis encountered. However, surgical intervention is sometimes useful in such a case, despite the mistaken diagnosis. M. CECHERELLI, of Parma, has tried to ascertain, 1, which are the cases of tubercular peritonitis in which surgical intervention is beneficial; 2, what are the reasons of the usefulness of such intervention. Four patients in his clinic gave him opportunity to study these questions. In two of them, a woman 32 years old, and a boy 11 years of age, who presented an enormous tumefaction of the abdomen, with fever, pains, etc., laparotomy, with extraction of several litres of liquid, followed by rinsing and dressing with iodoform, produced a complete cure. In one of these cases, the second, a relapse after three months enabled him to establish, *de visu*, the process of cure. He had to perform another laparotomy, which showed the existence of a large number of loops and adhesions between the parietal and visceral peritoneum. The third and fourth patients were children, in whom the ascites was inconsiderable and encysted in pockets, which he could open, drain, rinse and clean. All patients recovered, and in all the diagnosis of tubercular peritonitis was confirmed by the examination of the peritoneal fragments and of the liquids which were extracted. He thinks from his experience that laparotomy in peritoneal tuberculosis is especially useful in cases where there is considerable dropsy, the cure following, in Cecherelli's opinion, by the intermediation of an adhesive peritonitis after the laparotomy, with binding new formations which enclose and stifle the tubercles. In cases where these adhesions exist already it is not necessary to produce them by surgical intervention.—*La Semaine Médicale*, No. 17, 1889.

ON THE INFLUENCE OF TOBACCO SMOKE ON DIPHThERIA.—This question has been discussed in the medical college in Vienna. Supported by the discovery of Tassinari, of Pisa, which proved that the fumes of tobacco obstruct the development of the microbes, Dr. Hayack studied the statistics of the city of Vienna, to see whether cases of diphtheria were less numerous in men, generally smokers, than in women. In the last four years, 1885-1888, the proportion of cases in

men and women was 1:2.8; these figures confirmed, therefore, the results obtained by Tassinari. Dr. Unterholzer does not think that tobacco smoke has any influence on the progress of diphtheria for, according to statistics, the mortality of this disease is 4 per cent. less in women than in men. Dr. Neuderaefer accounts for the antibacteric action of tobacco smoke by the presence of pyridine, which is a bactericide. It may be remembered here that in bacteriological laboratories smoking is forbidden, as the smoke impedes the development of the cultures. A conclusive experiment of this kind was made by Israël in Virchow's laboratory.—*L'Union Médicale*, No. 54, 1889.

ANTISEPTIC POWER OF SALOL.—At a recent meeting of the Hunterian Society, MR. CORNER introduced a series of cases illustrative of the antiseptic power of salol (salicylate of phenol) as a dressing for wounds, after the part had been rendered aseptic by a 1 in 20 solution of carbolic acid. He did not claim for it greater power than iodoform, and probably other antiseptics, but it has advantages over some. It possesses a pleasant aromatic odor, can be used freely without fear of irritation or poisoning, is absorbent of moisture, which drying forms a hard but friable covering. It will prevent putrefaction; it will not destroy it when once established. It has been used in increasing frequency for several years at the Poplar Hospital, and with excellent results, in compound fractures and dislocations, also as a dressing in amputations, minor and major, and in compound comminuted and depressed fractures of the skull. The first case shown was a compound comminuted depressed fracture of the frontal bone, in which the bone was elevated and some spicules removed. Afterwards the wound was washed with a solution of carbolic acid (1 in 20), the opening filled with salol, and a drainage-tube inserted. The dressing was undisturbed for fourteen days, remained sweet, and healed on the twenty-sixth day. His temperature remained from the first under 100°. A second case treated in January, 1889, was a compound fracture of the olecranon, head of radius, and humerus, opening the elbow joint, with considerable damage to soft parts, the elbow having been crushed by the passage of a railway engine over it. The olecranon was splintered and drawn up, causing serious tension of skin and necessitating removal of both portions. The antiseptic treatment and dressing were the same as in the previous case, but required changing after four hours and again next day, in consequence of oozing through. The parts were then left untouched for thirty days. The temperature went up the day after the injury, and remained about 101° for three days, 100° for two days, and then fell to normal. Two other cases were shown: one a crushed compound fractured finger,

dressed twenty-one days before, and not exposed since, there having been neither pain nor elevation of temperature; the other was a compound fracture of first phalanx of finger, only dressed at the time of the accident, and left undisturbed for a month, when it was found perfectly healed. It was pointed out that this was the common experience in such cases, and that even if gangrene followed the parts remained sweet.—*Lancet*, May 4, 1889.

CASE OF HYSTERIA MINOR AND OVARIAN PHENOMENA IN A MALE.—DR. SAVILL, of the Paddington Infirmary reports the following case in *The Lancet* of May 11. C. G., æt. 20, who had been a shoeblack and paper-seller, was admitted into the infirmary on Dec. 7, 1888, for granular lids and irregular action of the heart. The heart appeared normal, and there was (?) no valvular lesion. He was pale and anæmic, but presented no feminine qualities, and the organs of generation were well developed. On April 5, when he was being prepared for an application of the mitigated nitrate of silver stick, he was taken with a nervous attack. He complained of a ball rising in his throat, and a stifling feeling and pain in his chest. Then he gasped for breath, the limbs became rigid, he assumed the position of opisthotonos, and slid off the chair on which he had been seated. There were no clonic convulsions, but the sighing respiration, rigidity, and other symptoms lasted for several minutes, when, water being thrown in his face, he recovered.

On search being made for other hysterical symptoms no alteration of sensation could be discovered, but there was very marked tenderness in both inguinal regions. The lightest pressure in either groin was resisted by the patient, and produced a recurrence of the above-described "attack" in a much more accentuated degree, accompanied by violent struggling and cries of "Oh! my heart! Oh! oh! oh!" In addition to being thus provoked, it was ascertained that these "attacks" had lately on one or two occasions occurred spontaneously, after a meal; and that the patient was frequently subject to terrifying dreams, out of which he would awake, gasping for breath. The field of vision was not tested, because the patient's eyes had been under atropine.

Remarks by DR. SAVILL.—Instances of this sort of hysterical attack are not frequent in the male subject, and careful inquiry was made with a view to ascertain the cause. Nothing could be discovered in the family history pointing to hereditary predisposition, though it should be borne in mind that the family history of this class is often very deficient, and that it is exceedingly rare to meet with the disease in the male without this kind of predisposition. However, it is quite possible that one or all of three causes were in ac-

tion in this case. 1. He had begun intercourse with the opposite sex at the early age of 16, and had lately had nocturnal emissions. 2. Both of the patient's eyes had been bandaged, and he had been placed in a dark corner of the ward for a period of seven weeks (Feb. 15 to April 5); and, though he had been subject to occasional "flutterings in the chest" prior to admission, he had only had the severe "attacks" since this treatment had been commenced. It seems to me probable that the introspective state induced by this long absence from the light had some connection with his hysterical condition. 3. In the same ward as this patient is in another, who is an undoubted hystero-epileptic, with whom he has mixed rather freely; and thus the element of contagion or imitation is introduced. Which of these three causes predominated it is difficult to conjecture, but it is probable that they all tended to foster and develop the marked hysterical phenomena exhibited by this patient.

RECONSTRUCTION OF THE BLADDER.—At the recent Surgical Congress at Bologna, Drs. TIZZONI and POGGI showed a dog from which they had extirpated the bladder, and afterwards formed a new one by means of a loop of small intestine. A segment of gut had been removed, the two ends of the divided tube carefully stitched together, and the transplanted portion fixed by one extremity in the position of the neck of the bladder, whilst the other was closed by ligature. The ureters had next been isolated, fixed to the sides of the new bladder, and their lower ends turned into it. The new bladder, possessing a mucous surface lined with cylindrical epithelium, was found to work well when the nervous centres had become accustomed to the altered relations of parts. The operation was done in two sittings; in the first the loop of intestine was isolated, together with its mesentery, emptied of faecal matter, washed out with carbolized water, and tied at both ends, one of which was fixed in front of the neck of the bladder; in the second, which took place a month later, the ureters were detached from the bladder, the latter organ was removed, the lower end of the intestinal segment was cut through and fixed to the neck of the bladder, and the ureters adapted to the new bladder. For a week or so there was incontinence of urine, then gradually the animal acquired control over the organ, so that it could hold its water for an hour. Several dogs have since been operated on in the same way with success. The dog shown at the meeting passed urine naturally, and showed no sign of incontinence. Drs. Tizzoni and Poggi finally discussed the applicability of this procedure to the human subject.—*British Medical Journal*, May 4, 1889.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5 00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Duglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JUNE 8, 1889.

YELLOW FEVER AND ITS PREVENTION.

At the Fourteenth Annual Meeting of the Arkansas State Medical Society, which was held at Pine Bluff, on May 28, Dr. ALFRED NELSON, member of the College of Physicians and Surgeons of the Province of Quebec, and late a member of the State Board of Health of Panama, presented a paper upon the subject of "Yellow Fever." An experience extending over many years at Panama, Colon, Mexico, Cuba and Tampa, renders him specially fitted to write upon this subject. The honor, as being the first to recognize and cultivate the yellow fever germ and to use inoculation as a prophylactic, he accords to Dr. Domingo F. Revie, of Rio Janeiro. In this connection he refers to the faith of Dr. L. Girrard, late Surgeon-in Chief of the Panama Canal Company, in the protective power of inoculation, who inoculated himself and had a mild form of yellow fever which seems to have been followed by perfect immunity from that disease afterwards.

Dr. Nelson predicts that inoculation for yellow fever is destined to take equal rank with that for small-pox, and believes that a new era is at hand in the treatment of this terrible scourge. With reference to its pathology, he looks upon it as a blood disease pure and simple, and that except in the destruction of blood corpuscles there is often an absence of any other marked pathological evidence, death resulting from necræmia. With such prophylactic treatment and a proper quarantine surveillance, the travel and the commerce of the

nations, he believes, will be subject to little interruption. When the opportunity permits we shall be glad to place the entire paper before our readers.

IS THERE A SPECIFIC FOR CONSUMPTION!

It would be amusing, were it not so sad, to recount the many remedial measures employed against consumption. Their very number is a commentary upon the powerlessness of man to overcome this terrible foe. The very fact that they are all more or less successful in individual cases, emphasizes the impotence of any one remedy against the disease universally, and makes one doubt the likelihood of a specific ever being discovered. Only the prejudiced or ignorant would deny the incalculable service to humanity of Koch's discovery of the tubercle bacillus, since, by disclosing to the surgeon the real pathology of numerous affections, it has enabled him to deal with them the more successfully. But in the matter of finding a practical solution of the problem, how best to combat pulmonary tuberculosis, has it done much? It enables the physician to recognize the enemy he is fighting at an early stage, and thus renders him material aid. Nay, more! By disclosing the bacillus as the probable cause of the disease, it has pointed out the path that may ultimately lead to the heart of the enemy's citadel. In other words, it has shown that the measures which are to prove curative of phthisis, must be such as will either destroy the bacillus or overcome its deadly influence upon the human organism. More than this cannot be said.

Notwithstanding the unremitting efforts of physicians to find a specific cure for pulmonary tuberculosis, this has not been achieved. For this reason, it may not be time wasted, to glance at some of the means that have been essayed and are now in use.

These may be classified as general and local; the general being such, as it is hoped, will antagonize the constitutional effects of the disease, and by improving nutrition, help the system to limit the local destruction; while the aim of local treatment, is the reverse. It seeks to so modify or circumscribe the changes produced within the lungs, as to ward off the injurious effects upon the system at large that are sure to follow the unchecked progress of the local lesion.

Both of these plans are at times successful, but the best results appear to follow their union. Whatever plan of attack be adopted, or whatever the remedies employed, there should always be a careful hygienic management of each case. As it is assumed that this is understood, and we desire to mention only some of the most promising remedial measures in use, nothing further will be said on this score.

The French are particularly fertile in devising anti-phthisical modes of treatment, and one still giving success, it is said, although not much commented upon in the journals, is the subcutaneous injection of carbolic acid. It is best dissolved in glycerine. A 2 per cent. solution, and of this ten or fifteen minims are injected once or twice daily at first. The total daily amount thus administered may be gradually increased, without fear of toxic effects, it is asserted, if chemically pure acid be used. The acid is also given by the mouth by some. There is no possibility of saturating the system to such an extent as to destroy the tubercular bacillus which is peculiarly resistant, and hence the beneficial action of carbolic acid must be otherwise explained. This is to be found probably in its well-known power of lessening suppuration and putrefaction. Thus the fever due to absorption of the products of suppuration in the lungs would be lowered, fermentation within the gastro-intestinal tract would be checked, appetite and digestion improved, cough and expectoration diminished, sweating restricted, and consequently strength regained, which are precisely the results claimed for this treatment by M. Dujardin-Beaumetz and others.

Closely allied to the foregoing, and vastly more popular at present, is the internal administration of creasote. Jaccoud attributes to it decided virtue in counteracting the disastrous effects of absorption in the stage of softening; whereas von Brun, Sommerbrodt and others after great experience with the drug, find it most beneficial in the stage of catarrh. It may be given in wine, cod-liver oil emulsion or in capsules. It is advised to begin with a daily dose of $\frac{3}{4}$ of a minim, which is to be gradually increased until the extreme limit of the stomach's toleration is reached.

Iodoform is likewise employed internally against phthisis, in pill-form, 1 grain being thus administered two or three times a day. Some favorable results have been reported of this agent

in conjunction with antipyretics. Great care should be exercised lest intoxication be produced.

Dr. C. T. Williams has experimented with phenyl-propionic acid in twenty cases of consumption of all stages, and with phenyl acetic acid in nineteen cases. The acids were dissolved in alcohol, one part in six, and of this ten to twenty minims were given in distilled water thrice daily. Of the cases treated with the former acid there was general improvement in 65.0 per cent., and improvement in the local manifestations of disease in 25.0 per cent. General improvement followed the use of the phenyl-acetic acid in 68.4 per cent., and local in 63.4 per cent.

These remedies are well borne by the stomach and may be administered for a long time. The phenyl-propionic acid seems to be the more suitable of the two for advanced cases.

Another drug from which excellent results are reported, is tannic acid in large daily amounts, forty to sixty grains. It was first proposed by MM. Arthaud and Raymond in consequence of their having found, by experiments on rabbits, that it lessened their susceptibility to inoculations of tubercular virus. Their observations have been confirmed by Ceccerelli, who found tannin exerted pronounced germicidal action in cases of tuberculosis of the bones and other accessible parts. In accordance with the views of Arthaud and Raymond, De-Viti-Demarco claims to have witnessed excellent results follow its prolonged administration in a number of cases, several of advanced phthisis. If given in moderate doses at first and gradually increased, it is tolerated by the stomach, and even improves appetite and digestion, cough, expectoration and night sweats; so that the medicine is certainly well worth a trial.

Of the effects of cod-liver oil, hyperalimentation, change of climate, etc., nothing need here be said.

Local medication is even more varied, and includes intra-pulmonary injections of solutions of iodine, carbolized camphor and the like, sprays of all possible antiseptic substances, the inhalation of ozone, oxygen and vapors of hydrofluoric acid, the wearing of respirators charged with divers sedative and antiseptic agents. But of all local measures account in detail can be given of only two. These are menthol and hot dry air. Fränkel and Rosenberg recommend the former by inhalation of its fumes at a tempera-

ture of 40° to 50° C. And in addition, Rosenberg advises intratracheal injections of a 10 per cent. solution in olive oil. To be efficient the Asiatic menthol must be employed.

The latest treatment, the one which seems *a priori* to come the nearest to being a specific, is the prolonged inhalation of air heated to a high degree, 250° C. (482° F.). Some accounts have already appeared in these columns of this measure, and Dr. Weigert's original communication to the *New York Medical Record* can be found in its issue of Dec. 15, 1888, together with a cut of his apparatus. The *rationale* of this treatment is based on the fact, that the tubercle bacillus is hindered in its development by temperatures either above or below that of the human body, 37.5° C. (99.5° F.) If, therefore, very hot air could be respired continuously, the bacilli ought to be destroyed, or at least deprived of their capacity for mischief. This being impossible apparently, Weigert has done the next best thing, viz.: made patients inhale air heated to 212° F. to 482° F. for two or more hours at a time twice or thrice daily. His published results are marvellous and warrant a careful investigation of his method. It commends itself for several reasons, one being that it can be used by the invalid at home. Not only do symptoms improve, but physical signs indicate the actual betterment of the local condition. To further the extended trial of this treatment, it is to be hoped that the instrument makers will place the apparatus on the market at such a price as will bring it within reach of all classes of patients.

THE DRAINAGE BILL.

Few subjects of State legislation have been more important than the Bill which was recently passed by the Legislature of Illinois, popularly known as the "Drainage Bill," and which received the signature of the Governor on the 29th of last month. Its purpose is the building of a ship-canal, which, in connection with the Mississippi river, shall form a great inland water communication between the Lakes and the Gulf of Mexico. Probably its importance to the Nation, and especially to the Mississippi Valley, in a commercial point of view, will hardly be over-estimated by its most sanguine promoters.

As a sanitary measure it has more than local interest and is worthy of a passing notice. Its

special importance to the city of Chicago can hardly be over-estimated. With a population numbering nine hundred thousand people, it was becoming a very serious question how properly to dispose of its sewage. The building of a ship-canal solves the whole problem—and, as it is believed, without detriment to other interests. A carefully conducted series of tests and observations has led our sanitary scientists to believe that the volume and velocity of the current will be such as to work its own purification and render it harmless to those who may be located in the vicinity of this new waterway.

With a tunnel projected four miles under the lake for the receiving of water beyond the limit of shore or surface pollution, and with such an outlet for its sewage—hardly more in these respects could be desired—and the ship-canal will doubtless prove to be one of the most important sanitary movements of the day.

A CRUTAL MURDER.

On the evening of May 4th, last, DR. P. H. CRONIN, a physician in the active practice of his profession, was called from his home and was driven to an unoccupied house at the Northern limit of Chicago and there murdered in cold blood. He went in answer to a request that he should minister to the needs of a laborer suffering from a severe accident—and in response to what seemed to be a legitimate demand of his profession, he went to his death. The motives which impelled to this foul murder we do not care to discuss, suffice it to say they neither compromised his individual or professional honor. Men may condone the crime of death by duel, perhaps; the assassin may enter a possible plea for leniency, but when in the name of suffering humanity a physician is thus lured from his home and brutally murdered, there are no words descriptive of such an atrocious crime, and there can be no palliation of such guilt.

THE ELECTION OF SECTION OFFICERS.

An old member of the Association, who joined it in 1859, writes to the Editor to say that he voted to change the election of officers of Sections, from the Nominating Committee to the Sections, but in his opinion there were gentlemen at a recent meeting who voted in several Sections, and

Both of these plans are at times successful, but the best results appear to follow their union. Whatever plan of attack be adopted, or whatever the remedies employed, there should always be a careful hygienic management of each case. As it is assumed that this is understood, and we desire to mention only some of the most promising remedial measures in use, nothing further will be said on this score.

The French are particularly fertile in devising anti-phthisical modes of treatment, and one still giving success, it is said, although not much commented upon in the journals, is the subcutaneous injection of carbolic acid. It is best dissolved in glycerine. A 2 per cent. solution, and of this ten or fifteen minims are injected once or twice daily at first. The total daily amount thus administered may be gradually increased, without fear of toxic effects, it is asserted, if chemically pure acid be used. The acid is also given by the mouth by some. There is no possibility of saturating the system to such an extent as to destroy the tubercular bacillus which is peculiarly resistant, and hence the beneficial action of carbolic acid must be otherwise explained. This is to be found probably in its well-known power of lessening suppuration and putrefaction. Thus the fever due to absorption of the products of suppuration in the lungs would be lowered, fermentation within the gastro-intestinal tract would be checked, appetite and digestion improved, cough and expectoration diminished, sweating restricted, and consequently strength regained, which are precisely the results claimed for this treatment by M. Dujardin-Beaumetz and others.

Closely allied to the foregoing, and vastly more popular at present, is the internal administration of creasote. Jaccoud attributes to it decided virtue in counteracting the disastrous effects of absorption in the stage of softening; whereas von Brun, Sommerbrodt and others after great experience with the drug, find it most beneficial in the stage of catarrh. It may be given in wine, cod-liver oil emulsion or in capsules. It is advised to begin with a daily dose of $\frac{3}{4}$ of a minim, which is to be gradually increased until the extreme limit of the stomach's toleration is reached.

Iodoform is likewise employed internally against phthisis, in pill-form, 1 grain being thus administered two or three times a day. Some favorable results have been reported of this agent

in conjunction with antipyretics. Great care should be exercised lest intoxication be produced.

Dr. C. T. Williams has experimented with phenyl-propionic acid in twenty cases of consumption of all stages, and with phenyl acetic acid in nineteen cases. The acids were dissolved in alcohol, one part in six, and of this ten or twenty minims were given in distilled water daily. Of the cases treated with the former there was general improvement in 65.0 per cent. and improvement in the local manifestation of disease in 25.0 per cent. General improvement followed the use of the phenyl-acetic acid in 65.0 per cent., and local in 63.4 per cent.

These remedies are well borne and may be administered for a long time. Phenyl-propionic acid seems to be the more suitable of the two for advanced cases.

Another drug from which much benefit is reported, is tannic acid in doses of forty to sixty grains.

MM. Arthaud and Raymond have reported that it lessened the

activity of tubercular virus.

This has been confirmed by experiments on guinea-pigs.

It has exerted pronounced effects in the tuberculosis of the lungs.

In accordance with the views of Arthaud and Raymond, it has been witnessed excellent results in the

administration of tannic acid in advanced phthisis.

It acts at first and gradually improves the stomach, and

diminishes cough, and so that the medicinal value of tannic acid

is evident. Of the effects of tannic acid, change of color of the sputum may be said.

Local medication includes intra-pulmonary injection of iodine, carbolized iodine, of all possible antiseptics, of ozone, of fluoric acid, the use of divers sedatives, of all local measures, given of only two or three times a day. Fränkel has reported former by inhalation.

Taulmin and G. E. Clark, assistant house surgeons; Drs. Alan P. Smith, James Carey Thomas, Isaac E. Atkinson, S. C. Chew, Frank Donaldson, W. T. Howard, C. Johnston, T. S. Latimer, F. T. Miles, G. W. Miltenberger, L. McLane Tiffany, and H. P. C. Wilson, consulting physicians and surgeons.

DURING the past year the Pennsylvania Hospital treated 2,363 cases in its wards, 4,409 accident cases, and 7,616 out-patients.

BEQUESTS.—It is announced that the late Mrs. Sargeant, daughter of Dr. Oliver Wendell Holmes, has bequeathed to Harvard College \$10,000 as a memorial to her father, the income to be applied for the use of the anatomical department; \$25,000 for the general purposes of Harvard University; \$5,000 to the Massachusetts General Hospital; and in the event of her brother, Judge Holmes, leaving no issue, a further sum of \$25,000 to the Boston Medical Library Association.

A SCHOOL OF HYGIENE has been established at Naples.

PROF. CARL VOGT, the eminent biologist of Geneva, celebrated the fiftieth anniversary of his graduation as Doctor of Medicine on May 19.

PROF. TOMMASO VIRNICCHI, of Naples, one of the pioneers of modern surgery in Italy, died recently at the age of 64.

FATHER DAMIEN, the well-known Belgian priest, who labored so patiently for sixteen years in the leper colony of Molokai, in the Sandwich Islands, succumbed to the disease on April 10.

GALVANI ON ELECTRICITY.—Signor Dall'Olivo, the assessor, recently paid a visit to the Communal Library at Bologna, Italy, and in the course of his search came on a book-case containing a number of volumes which had not been classified. Among them was found a hitherto unknown treatise by Galvani, on electricity.

M. PASTEUR will deliver the Croonian Lecture on the 23d inst.

MEDICAL EDUCATION IN TURKEY.—The Sultan has granted a subsidy of 500,000 piastres for the erection of a new clinical building and laboratories in connection with the Medical School at Constantinople.

BRITISH MEDICAL ASSOCIATION.—The fifty-

seventh annual meeting of the British Medical Association will be held at Leeds on August 13, 14, 15 and 16, 1889. The president-elect is Mr. C. G. Wheelhouse, F.R.C.S. The address in Medicine will be by J. Hughlings Jackson, M.D., F.R.S.; the address in Surgery by T. Pridgin Teale, M.B., F.R.C.S., F.R.S.; and the address in Psychology by Sir J. Crichton Browne, M.D., LL.D., F.R.S.

THE GERMAN DERMATOLOGICAL SOCIETY holds its first congress at Prague during the coming week.

CONSUMPTION IN THE GERMAN ARMY is greatly dreaded by the authorities since the recent Parisian Medical Congress pronounced that the disease was contagious. Accordingly, the German War Minister has decided that the chest of every soldier must be measured once a month. If the chest does not reach a certain breadth, and does not develop with drill and athletic exercises, the soldier will be disqualified as predisposed to consumption, and likely to infect his comrades.

SOCIETY PROCEEDINGS.

The American Surgical Association.

Annual Meeting, held in the New Army Medical Museum, Washington, May 14, 15, and 16, 1889.

(Continued from page 787.)

WEDNESDAY—MORNING SESSION.

DR. J. COLLINS WARREN, of Boston, read a paper on

THE EARLY DIAGNOSIS OF MORBID GROWTHS.

Reference was first made to the great desirability of some means of making an early diagnosis in cases of possible malignant disease. The attempt to make a microscopical examination of morbid growths before their removal dates back to the earliest period of microscopical histology. The pain and danger of inflammation attending the methods adopted led to their abandonment. Antiseptic surgery, however, now enables us to perform such an operation almost with absolute certainty of absence of inflammation. Local anæsthesia with ether spray or cocaine renders the exploration free from pain. The instrument which the author employs consists of a small canula, sharpened at the end. The calibre of the instrument varies from 2 to 5 millimetres. The in-

strument is used by gently rotating the canula between the fingers. After the instrument has penetrated the tumor to the desired depth, it is withdrawn a short distance, and then entered obliquely so as to cut off the column of tissue. The piece removed may be as large as 5 mm. in diameter and 3 cm. in length, or even larger. The fragment can be at once examined by means of freezing microtome or placed in alcohol and hardened. The operation can readily be performed at the physician's office and immediate diagnosis made. Several cases were reported illustrating the information obtained by the use of the canula. The instrument has been used in over 100 cases, with little or no discomfort to the patient and with satisfactory results. It has been used in abdominal tumors. It has been used in one or two growths involving the abdominal parietes and peritoneum, but not in deep-seated organs. The object of the author in bringing the results of his observations before the Association, was to show that modern improvements have made an old and discarded method not only practicable, but a valuable addition to our means of surgical diagnosis.

DR. F. S. DENNIS, of New York: I wish to protest against reliance upon this instrument in the diagnosis of malignant disease. I have never found pathologists willing to base a diagnosis of malignant disease upon the shreds of tissue removed by such instruments. More reliance is to be placed upon the clinical features than upon the microscopical appearances. Among these are age, situation of the tumor, the macroscopic appearance, pain, cachexia, lymphatic enlargement, hereditary influence, and finally the use of the harpoon. While the harpoon or canula is a useful adjuvant, we cannot rely upon it absolutely in making the diagnosis.

DR. P. S. CONNER, of Cincinnati: I think that there is nothing more definitely settled than the difficulty of relying absolutely upon the microscopical examination in cases of supposed malignant disease. It is a confirmatory testimony of great value. In the instrument presented we have an additional aid to our means of diagnosis. While the points presented by Dr. Dennis are valuable, they do not aid much in the early diagnosis.

DR. R. A. KINLOCH, of Charleston, N. C.: It is a well established surgical principle that all tumors should be removed, so that the early diagnosis is perhaps not so essential. The question that arises is whether it would not be better to remove the tumor and make the diagnosis of its nature afterwards.

DR. W. H. CARMALT, of New Haven: In carcinoma and sarcoma the clinical features are, to my mind, a great deal more important than anything we can obtain from the microscope. Microscopical examination of different parts of the same tumor may present different appearances. An-

other point in regard to the use of the canula is the danger that the irritation excited by the instrument may convert a benign tumor into a malignant growth.

DR. WM. H. RICHARDSON, of Boston: I have seen this instrument used in many cases without bad effect, and the microscopists consider that they derive valuable information from examination of the plugs of tissue removed. We cannot make a correct diagnosis in the earliest stages of malignant disease from the clinical evidence alone, and it seems to me that in the early diagnosis this instrument affords valuable aid.

DR. L. McLANE TIFFANY, of Baltimore, read a paper on

FREE DIVISION OF THE CAPSULE OF THE KIDNEY FOR THE RELIEF OF NEURALGIA.

Four years ago the author had suggested the use of incision of the capsule of the kidney in the treatment of neuralgia. The patient, a woman *æt.* 49, white, married. Had had gonorrhœa and syphilis. She had had abscess of the pelvis opening by the vagina, the discharge continuing for two years. Three years ago she experienced, in the right loin, sudden severe pain, lasting for a moment. It was supposed to be due to the passage of a kidney stone. The attacks recurred at irregular intervals, the periods becoming progressively shorter and the pain more intense. No calculi had ever been voided. Blood had been seen at rare intervals. The pain always began in the right loin midway between the pelvis and the ribs. It then extended towards the middle line of the body, and down to the bladder and groin on the right side. Exertion was apt to induce it. Pressure on the right kidney caused acute pain, but no tumor could be made out. The urine was moderately acid, sp. gr. 1022, contained pus cells and a few red blood discs. There was no rise of temperature during the attacks.

The operation was performed January 12, 1889. The kidney, when exposed, moved freely during respiration. A deep stellate scar existed in the kidney, two inches from the lower end. No other abnormality was discovered. A sound was passed into the pelvis and a systematic exploration made, but no stone was detected. The capsule was then freely slit open for three inches. The edge of the cut gapped widely. The wound was then closed and an aseptic dressing applied. No urine passed by the lumbar wound. This soon healed, and since the operation, a period of four months, there have been no attacks of neuralgia.

DR. THEODORA A. MCGRAW, of Detroit: Three months ago I operated on a woman on the supposition that there was a renal calculus. None was found, but the capsule was freely slit and since the operation there has been no return of pain.

DR. LANGE, of New York: In one case of

severe pain recurring at irregular intervals, I operated with the expectation of finding a stone in the kidney, but none could be detected. I then proceeded in the manner described by the reader. The patient remained free from pain for three or four months. The attacks then reappeared.

DR. W. W. KEEN, of Philadelphia: I would like to refer to one source of error in the diagnosis of renal calculi, which has not been mentioned. I recently operated on a case of tumor of kidney in which, when the needle was passed into the substance of the organ, it gave a distinct impression of coming in contact with a stone. The tumor was malignant, and so adherent that it could not be removed. Subsequent examination showed that there was no calculus and that the needle must have come in contact with a calcareous vessel, of which there were several, or a mass of calcareous matter which was present.

DR. JOHN HOMANS, of Boston: I recently operated in a case in which there was a large swelling in the perineum, in a boy of 15 years. I removed, by perineal section, thirteen stones from the urethra. The urethra would admit my forefinger. There was also a swelling in the loin, which did not disappear after the operation. Three weeks later I opened the kidney through the right loin. I found a considerable quantity of pus, but could detect no stone, although I am not sure that a stone may not have been present.

DR. J. M. BARTON, of Philadelphia, read a paper on

DIGITAL DIVULSION OF THE PYLORUS FOR CICATRICAL STENOSIS.

(See page 799.)

DR. R. A. KINLOCH, of Charleston, S. C.: I have no personal experience with this operation. We must accept the testimony of reliable men, but I cannot understand how an organic stenosis of the pylorus is cured by a single dilatation. This is not the case with organic stenosis in other parts, as the rectum and œsophagus. I am inclined to believe that where the benefit has continued for any length of time, the organic change has been slight. I can understand how benefit could be expected if the wound were kept open and the stricture systematically dilated.

DR. M. H. RICHARDSON, of Boston: The mortality of gastrotomy, as a primary operation, is extremely small. I have also found, from sixty dissections, that the longitudinal incision between the greater and lesser curvatures made the best incision for reaching either the pylorus or the cardiac extremity of the stomach. The shortest incision was one inch, but the incision usually required was two or three inches.

DR. J. EWING MEARS, of Philadelphia: While it may not be easy to explain the results obtained by digital divulsion of the pylorus, there can be no question as to the beneficial results. The evi-

dence of reliable operators certainly indicates that it is a proper operation and attended with successful results. This operation should always be performed in preference to pylorotomy.

AFTERNOON SESSION.

DR. THEO. A. MCGRAW, of Detroit, read a paper entitled

A CONTRIBUTION TO THE HISTORY OF GUN-SHOT WOUNDS OF THE ABDOMEN.

Reference was first made to a case of gun-shot wound of the abdomen operated on by Dr. R. Abbe, of New York, July 8, 1886, in which, four hours after the accident, adhesions of the intestine to the abdominal wall were found, forming a cavity containing extravasated fæces. The adhesions were broken up, and four holes in the bowel and one in the bladder were closed. Suppression of urine and death followed. In August, 1887, the author was called to a case of gun-shot wound of the abdomen, fourteen hours after its occurrence. At the operation it was found that adhesions had formed, shutting off the peritoneal cavity. These were broken up and eight perforations of the bowel found. Five of these had become so occluded by lymph as to be detected with difficulty, and no discharge could be forced thro' them. Four feet of the ileum were excised. The patient died twenty-six hours after the operation. A study of these cases led the reader to suggest that under such circumstances the drainage of the cavity would be the best plan to adopt. The artificial anus or fæcal fistula could then be operated on at a later period. The question arises, whether or not these cases of early agglutination are sufficiently numerous to warrant our making them the point on which the treatment of all cases of penetrating wounds of the abdomen, over six hours old, must turn. This question can not be decided at present.

A review of the approved methods of treating gun-shot wounds of the abdomen was then taken up. The great danger has been shock. The shocks had depended, 1st, upon the time occupied in operating; 2d, upon the amount of evisceration; 3d, upon the number and the nature of the injuries to be repaired; 4th, upon the chilling of the intestines; and 5th, possibly upon the long-continued anæsthesia. In discussing the subject the following propositions were considered, many of them based upon experiments upon dogs and sheep:

1. The gravity of an injury of this kind depends partly upon the size of the missile.

2. Gun-shots which enter the abdominal cavity pass in a nearly absolutely straight line from the orifice of entrance, through the peritoneum to that of exit, or to their final stopping-place in the viscera. All apparent deviation of bullets fired

into the abdomen from a direct path are due to changes in position subsequent to the shooting.

3. An incision made directly in the course of the ball, will give the shortest route to the injured viscera.

4. The contents of the bowels may be made to discharge through an open gun-shot wound by manipulation and pressure.

5. An empty condition of the alimentary canal is most favorable to healing. To secure this it may be proper in some cases of injury of the bowel immediately after a hearty meal to evacuate the contents of the stomach by means of a syphon.

6. Agglutination and limitation of the morbid processes consequent upon gun-shot wounds may take place as early as the sixth day.

7. Senn's method of hydrogen-gas insufflation, however admirable in recent cases, should be used with great caution in cases four hours old, and especially in those made by small bullets.

8. The dangers of the operations for penetrating gun-shot wounds of the abdomen are directly in proportion to the length of the operation and to the amount of the evisceration. The duration of the operation may be lessened, 1st. Making the incision over the line taken by the ball, or if it has passed from before backward, over the point of entrance. 2d. By limiting the examination of the viscera strictly to such of them as may have been in the course of the ball. 3d. By suturing wounds of the intestine, wherever it is possible, instead of excising them. 4th. By omitting all operative procedures, even suture, in wounds which have become so thoroughly occluded by plastic material that the contents of the bowel cannot be pressed through them. 5th. By operating first on those wounds which imperatively demand it and leaving to the last those which may recover without operation. 6th. By never eviscerating a patient, except, first, when hæmorrhage is otherwise uncontrollable; and secondly, when there is a discharging wound which cannot otherwise be found. The evisceration of a patient is as dangerous as any gun-shot wound of the intestine which cannot be made to discharge its contents by manipulation or pressure can possibly be. There are cases where evisceration is necessary, but the author protested earnestly against the habit of eviscerating patients suffering from gun-shot wounds of the abdomen as a matter of routine. We are not warranted in turning a man inside out and subjecting him to frightful dangers in the mere fear that there may still be an undiscovered wound, when all the symptoms which ought to indicate such a wound are absent.

9. In cases of these wounds in which the patients may be too weak to undergo any radical operation for their repair, efforts for their relief may be made by incision and drainage, and in some cases by attaching the injured intestine to

the abdominal wall, as in gangrenous hernia. This procedure, occupying but little time and making no draft upon the strength of the patient, may offer a hope of recovery which would not be possible under the expectant mode of treatment.

DR. D. W. YANDELL, of Louisville: The statement in regard to the course of balls is new to me. A number of cases which I have seen had led me to believe that balls entering the abdomen might deviate very greatly. I am not altogether prepared to accept the statement at present. In one case, in which the pistol was held near the individual and in a straight-line, the ball entered above the symphysis pubis, and was found below the spleen, having wounded intestines in its course. The recommendation that in the extreme cases, where the patient is greatly exhausted, the wounded intestine be secured at the abdominal incision, is certainly conservative, and it would seem to me to be wise.

DR. C. B. NANCREDE, of Philadelphia: There are such a number of cases on record in which it was supposed that the balls were deflected, that I think that there can be no doubt that this occurs occasionally. In regard to the incision, from my experience with both the median and lateral incision I am forced to the conclusion that unless we are certain that the ball has followed an antero-posterior course, the median incision is to be adopted in every case, with rare exceptions. I suppose that Dr. McGraw means by evisceration, removal of the intestines *en masse*. It makes a great difference, as far as shock is concerned, whether the intestines are removed all together or simply an inch brought out of the opening, immediately replaced and another portion examined, at no time exposing a large portion of the bowel. So many cases have been recorded in which death was the direct result of overlooking a single wound of the viscera or blood vessels, that the only safe rule is to make a thorough examination before closing the abdominal incision.

DR. J. EWING MEARS, of Philadelphia: The median incision is, I think, the one which should be adopted. It can be extended any desired distance, which cannot be done with the lateral incision. By the median incision the entire abdominal cavity can be inspected. In regard to what has been termed evisceration, I think that it is better to permit the patient to die without operation than that an incomplete or imperfect operation should be performed. I think that the surgeon would be almost criminally culpable if after subjecting the patient to the dangers of an abdominal section he closes the abdomen without satisfying himself by thorough examination that he has found every wound that could have been inflicted. It is not necessary to turn all the intestines out. It is sufficient to slip them through the hands, subjecting them to careful inspection.

DR. R. A. KINLOCH, of Charleston: After the

abdomen is opened in a search for wounds I think that every wound should be closed. We cannot say that one wound is of less importance than another.

DR. W. W. KEEN, of Philadelphia: As regards the line of incision, we should make a distinction between stab wounds and gun-shot wounds. In the former case I think the incision should be made at the point of wound, while in the latter the almost invariable rule should be the median incision. I can but agree with previous speakers that after we have opened the abdomen no case is properly treated if we leave by any possibility a single wound. Every wound should be sutured.

DR. C. H. MASTEN, of Mobile: In regard to the course of balls, I treated one case in which the ball entered one inch to the right of the umbilicus, made nine openings in the intestine, passed down through the bladder, out through the prostate, and lodged near the tuber ischii on the left side. The spinal column had not been injured.

DR. F. S. DENNIS, of New York: I believe that it is a rule, without exception, that the median incision should be made where we are going to sew perforations in the bowel, or stop hæmorrhage in the abdominal cavity. The point of first importance is the control of hæmorrhage. The median incision will permit the surgeon to enter the peritoneal cavity in half a minute.

DR. STEPHEN H. WEEKS, of Portland: I have not heard allusion in regard to the use of Dr. Senn's method. He laid stress upon two points, first, the use of the gas in determining whether perforation had occurred, and second, in locating the openings in the bowel. It seems to me that this latter is a valuable point.

DR. STEPHEN H. WEEKS, of Portland, Me., read a paper on

DRAINAGE AND DRAINAGE-TUBES IN THEIR APPLICATION TO THE TREATMENT OF WOUNDS.

He referred to the great importance of drainage, and after alluding to the various methods proposed for securing it, described a new form of absorbable drainage-tube prepared from the arteries of animals. The arteries used are those of the ox. They are separated from their sheaths, cut into tubes 4 or 5 inches long. They are then boiled in water for about five minutes. This sterilizes them and hardens their coats. Holes are next cut in their sides and they are passed over glass rods of different sizes, according to the size of tube desired. They are now placed in corrosive sublimate solution, 1:100, and allowed to remain ten minutes. Then they are placed in alcohol, 95 per cent., and at the end of twenty four or forty-eight hours the glass rods are removed, the tubes being kept in alcohol until needed. These

tubes are unirritating to the tissues, they are absorbed in from five to seven days and drain the wound perfectly.

THURSDAY, THIRD DAY—MORNING SESSION.

DR. JOHN HOMANS, of Boston, reported

A SUCCESSFUL CASE OF NEPHRECTOMY FOR THE REMOVAL OF CANCER OF THE RIGHT KIDNEY.

The patient, a woman of 50, for a year had suffered with frequency of micturition. The urine had been dark and bloody at times. For three years she had suffered from indigestion. The tumor had been discovered in 1887 in the right iliac region, and since July, 1888, it had grown rapidly. It filled the right iliac region and more or less the umbilical and pubic regions. On palpation large irregular nodules were felt, and in some parts there was fluctuation. Laparotomy was performed January 21, 1889. The incision was made in the linea alba and was 4 inches in length. The tumor was exposed, and in the upper part was seen the remaining portion of the kidney and two large renal veins. These were tied with silk and the ureter was next tied and divided, and then the pedicle was readily ligated. The tumor was removed, a glass drainage tube introduced, and the wound closed and dressed with iodoform gauze and absorbent cotton. The tumor measured 6 by 9 inches and weighed 53 ozs. There was very little shock. The amount of urine since the operation has varied between 10 and 57 ozs. and has been gradually increasing. There was but little discharge from the drainage tube, which was removed on the fourth day. One month after the operation an abscess was opened in the right lumbar region. A slight swelling and some tenderness still remains in the right loin; whether these are wholly inflammatory or due to a recurrence of the growth cannot at present be determined. The patient is rapidly gaining strength.

The experience of the author led him to say that a large renal tumor which cannot be diminished in size by tapping (he would consider one weighing 1 lb. or more a large tumor), can most conveniently be removed by an incision through the linea semilunaris or in the linea alba. Small tumors and those that can be diminished may be removed by the lumbar incision. In cases of moderate-sized kidneys disorganized with pus, or tubercular or containing calculi, the lumbar incision is preferable.

DR. FREDERICK E. LANGE, of New York: In cases where a large tumor of the kidney is to be removed and where it is desirable not to open the peritoneal cavity, I have found a trap-door incision with resection of one or two ribs if necessary, give ample room for operation. I have operated nine times, but never for neoplasms. With free incision and open antiseptic after-treatment I re-

gard extirpation of the kidney, even in cases of large tumors, a comparatively safe operation.

DR. M. H. RICHARDSON, of Boston: There is a frequent anomaly of the vascular supply of the kidney which should be borne in mind in operations. Instead of one renal artery there may be three or even four arteries. If such a pedicle is ligated *en masse*, there is danger of slipping of the ligature and hæmorrhage. This is obviated by tying the pedicle in several sections.

DR. LEWIS S. PILCHER, of Brooklyn, read a paper on

THE QUESTION OF THE ANTI-TUBERCULAR POWER OF IODOFORM, WITH A SUGGESTION FOR A MORE EXACT CLINICAL TESTING OF THE SAME.

The paper first called attention to the different results obtained by the application of iodoform to tubercular tissues according as the results were derived from clinical experience or from observation of tubercular affections artificially induced in animals. The following case was a contribution to the study of this question:

A girl æt. 13, with a family history of tuberculosis, came under observation with an infiltrated and ulcerated patch on each leg; there was also on each thigh an infiltrated patch without ulceration. The disease was of three months' standing. The diagnosis of tuberculosis of skin was made. The patch on the right leg was excised and microscopical examination confirmed the diagnosis; tuberculous nodules with bacilli were found. The patches on the thighs were also excised and healed without further treatment. Bismuth was applied to the patch on the right leg and healing progressed satisfactorily. It was then determined to apply skin grafts. The sore was curetted, the grafts applied and did well for a time. Later the epithelial elements broke down and a number of small ulcers formed. At the base of each ulcer was found a particle of bismuth. Portions of the tissue removed, however, showed no bacilli. No iodoform had been employed. Boracic acid ointment and the occasional application of nitrate of silver were now ordered. The ulcer on the left leg was curetted December 10, 1888, sprinkled with iodoform and covered with absorbent cotton. It rapidly healed, and on January 25 a wedge-shaped piece was removed and examined. It was entirely free from evidences of tuberculosis. A soft natural skin has since formed.

DR. W. H. PANCOAST, of Philadelphia, made some brief remarks on the following topics:

1. That the so-called metacarpal bone of the thumb did not belong to the metacarpal group; that its method of development clearly placed it in the class with the phalanges.

2. He next exhibited and described his urethrotome, which he had used with satisfaction for twenty years.

3. A delicate knife which he termed the therapeutic knife, employed for making numerous minute punctures in an inflamed part for securing an antiphlogistic effect.

4. A gun breech which had remained for some time unsuspected in the superior maxillary bone of a boy.

5. The use of black silk bandages and black adhesive plaster as adding greatly to the neatness of a dressing.

6. The use of iron dyed black silk ligatures.

7. His method of treating varicocele by passing a silk thread through the scrotum between the vas deferens and the veins, returning it through the same opening in the skin but in front of the veins, passing the ends of the ligature through holes in a metal plate and tying tightly. The cure is complete in three or four days.

The committee appointed to take action in regard to the death of Dr. S. W. Gross, presented the following:

WHEREAS, It has pleased the Almighty to remove from our midst Dr. Samuel W. Gross, who assisted in founding the American Surgical Association and contributed by his example and work largely to its success, who as a teacher was enlightened and impressive, as an author was accurate and original, as a surgeon was sound in judgment, rich in clinical experience, skilled in manipulation, and as a Fellow was genial and courteous; therefore, be it

Resolved, That the Association deplores his death as an irreparable loss, and directs that a copy of the foregoing be spread upon its minutes and forwarded to his bereaved family. Signed,

D. W. YANDELL,
P. S. CONNER,
J. EWING MEARS.

OFFICERS FOR ENSUING YEAR.

President—Dr. D. W. Yandell, Louisville, Ky.
Vice-Presidents—Dr. Claudius H. Masten, of Mobile; Dr. C. B. Nancrede, Philadelphia.
Secretary—Dr. J. R. Weist, Richmond, Ind.
Treasurer—Dr. P. S. Conner, Cincinnati.
Recorder—Dr. J. Ewing Mears, Philadelphia.
Council—Drs. John S. Billings, L. McLane Tiffany, W. F. Peck and F. S. Dennis.
Chairman of Committee of Arrangements—Dr. J. S. Billings, Washington.

The following were elected members: Dr. Stephen H. Weeks, Portland, Me.; Dr. Robert F. Weir, New York; Dr. John Homans, Boston; Dr. Lewis A. Stimson, New York; Dr. Frederick E. Lange, New York; Dr. Lewis S. Pilcher, Brooklyn; Dr. Levi Cooper Lane, San Francisco; and Dr. Arthur T. Cabot, Boston.

The Association then adjourned to meet in Washington the second Tuesday in May, 1890.

Philadelphia County Medical Society.

*Stated Meeting, April 10, 1889.*THE PRESIDENT, W. W. KEEN, M.D., IN
THE CHAIR.DR. GEORGE ERETY SHOEMAKER read a
paper on

EARLY RECOGNITION AND TREATMENT OF MALIGNANT DISEASE OF THE UTERUS.

In considering this subject two general standpoints present themselves; that of the pathologist and that of the clinician. While of course both are interdependent and of great importance, it is proposed in these remarks to give special attention to the recognition of cancer by the means available to the practical physician who is called upon to make up his mind during the life of the patient what the trouble is and what is to be done for the patient's good.

The importance of the subject, since every physician finds a large part of his practice to be among women, is shown by the mere statement that out of 4,600 cases of diseases of women reported by Emmett, 113 from all classes of society had malignant disease of the uterus, or 2.45 per cent.

As in the case of malignant tumors of other portions of the body, their existence in the uterus in advanced stages is easy to determine, though some obscurity as to the variety may remain. The peculiar sharp, inconstant, lancinating pain in abdomen, back and thighs; the discharge of watery fluid with a characteristic odor; the presence of hæmorrhage and cachexia; form a group of symptoms which are conclusive almost without an examination; while even the practitioner who almost never makes a vaginal exploration would not fail to recognize an advanced growth on touch and inspection.

Whatever be the nature of the growth, the immobile uterus, the cervix large, hard and patulous; the abundant nodules, hard, inelastic, immovable; the extensive ulceration, the probable presence of exuberant granulations if not cauliflower excrescences, with their friable, easily bleeding characters, will be at once recognized.

But it is in precisely these far advanced cases that diagnosis is least important, for the palliation from operative treatment is greatly less than in earlier stages. The time to diagnose cancer is in the very beginning, when thorough removal can be made, and it is just here that the average practitioner is at fault. Perhaps through lack of confidence in his own powers of diagnosis, perhaps from a general impression that no benefit would be derived from treatment, perhaps from a personal distaste for such examinations and long disuse of them except before and during labor (I say before and during labor, not

after labor, for it would seem, as far as the writer's observation goes, not to be a habit among practitioners to satisfy themselves, by systematic examination at the end of every puerperal period, that no serious lacerations or displacements are left to produce future trouble), from whatever cause it may be, cases of malignant disease of the uterus are too often allowed to drift along through a most important period unrecognized. Even if not a specialist, if a practitioner will take the trouble to do his very best he can learn much in such cases. Let him take plenty of time, go to the trouble of securing a good light so that he can see clearly, let him see the case on his office chair if possible, at any rate not with the hips half buried in a bed, placed as far as possible from a heavily curtained window.

It is, however, true that in a few cases malignant disease will make considerable advance without giving rise to symptoms enough to bring about an investigation.

Early symptoms.—Bleeding in most cases first attracts attention. If menstruating the woman will lose more at her periods or may bleed between them, as she does from many other causes. If she has definitely ceased to menstruate, the occurrence of hæmorrhage, even though slight, should always lead to immediate examination; for while the cause is more likely to be fungous endometritis or a fibroid or polypoid tumor, evidence of cancer may be found. It is not a trifling matter to suggest that the results of this examination should be put upon record, with the date, even though apparently negative. The discharge is irregular, increased by exertion, and may consist either of bright blood which will clot, or of a bloody watery fluid, with or without odor. The patient may at the same time have a free leucorrhœa, of independent origin.

The nature of the disease may not be suspected by the woman, who may present every appearance of florid health, and whose previous life may have been more than usually free from disease. Usually, however, there will be some evidence of impaired vitality and loss of tone; though a true cachexia, with its dead-white, or sallow, or straw hue of the skin, its pinched and peculiar expression, belongs to a later period of the disease, when there is considerable constitutional change.

The very earliest symptom is in some cases pain while others will pass through all stages of the disease and remain remarkably free from it. The writer has in mind a case of his own, where the diagnosis of advanced epithelioma does not admit of question, and where pain has never occurred in any considerable degree.

In another case under his observation, but slight pain is present and that not characteristic.

It is said to be generally more severe in epithelioma than in the interstitial forms of disease,

and more apt to be severe when the infiltration passes beyond the cervix to the body of the organ. Infiltration of surrounding pelvic tissues involves pressure on sacral nerves, which occasions severe pain in one or both hips and down the backs of the thighs; but the pain may come from nipping of terminal fibres of the sympathetic system within the cervix or body of the organ. Persistent pelvic pain, especially if lancinating and extending to the loins and the back of the thighs, should excite suspicion of malignant growth, particularly in women near the menopause. The offensive watery discharge speaks of disorganization of tissue and is not often a very early symptom, though characteristic when found. Offensive leucorrhœa from other causes is not uncommon, but there is no smell like a cancer smell. The absence of odor is by no means indicative of the absence of disease, and this is true of *every other* single symptom.

Thus far there is nothing to suggest the variety of growth which may be present. Examination reveals more exactly the condition of affairs.

The malignant growths which may involve the uterus are quite variously classified, but may be given as follows in their order of frequency:

Epithelioma;

Encephaloid or "soft" cancer;

Sarcoma;

While scirrhus and colloid cancer (or as it is now classified by some writers, myxo-sarcoma) may be described as rare.

Signs.—In epithelioma, the finger in the vagina usually finds the cervix harder than normal even in early stages of the disease. The growth begins either in the mucous membrane lining the cervical canal, or on the vaginal portion of the cervix. If the former, the only fact discoverable by the finger will be an enlargement and hardening of the neck, while the os is enlarged and irregular. Ocular inspection may show nodules within the cervical canal, perhaps covered by an ashy deposit. Their color ranges from pale yellow to dark red, according to the amount of blood infiltration. Their hardness is quite characteristic. The mucous membrane is bound down and immovable. Goodell has suggested that in such a case the introduction of a sponge tent will materially aid the diagnosis.

Says he:

"If the cervix soften down, the os dilate, and the mucous membrane become movable under the expansion of the tent, the disease is probably a benign one. If, on the other hand, the cervix remain hard, its mucous covering immovable, and the os unyielding, the suspicion of malignancy will be confirmed." (*Lessons in Gynecology*, p. 224.)

The uterus meanwhile may remain movable, and scarcely, if at all, enlarged, as the disease extends; while, as a rule, advancing no higher

than the cervical canal, a rough friable mass occupies that passage, which breaking down in the centre, may leave the cervix excavated, so as to form a large cavity extending to the internal os. The edges of this cavity are often sharp, hard and irregular. Pain may still be almost entirely absent.

When beginning at the vaginal portion of the cervix, externally as it were, the epithelioma assumes one of two forms, either appearing as an ulcer with irregular edges and an excavated base covered with ashy-colored detritus, or else taking the form of a fungous mass. This mass of friable, rough granular feel may be spread out over the cervix, or spring from it as a pedunculated outgrowth, forming the so-called cauliflower excrescence. This form when present is sometimes very easily recognized by the fact that it feels as though portions could be broken off. A polypus is usually softer and smoother, and a papilloma is less fragile, less irregular, and may be enveloped by a continuous epithelial coating.

Two cases, seen for the first time within a few weeks of each other, may be cited in illustration, one of fungous-like epithelioma, and the other of fibrous polypus. Both women were beyond the menopause a few years. Both had some bladder irritation and pelvic uneasiness, but no pain. Both had borne children. Both had leucorrhœa. One of them had seen a little blood irregularly, and was pallid. In both, the only abnormal structure discoverable by the finger was a round pedunculated growth of about the size of a walnut, which grew from the cervix. The pedicle in each case was about half an inch through, was distinct, like the stem of a toadstool, but shorter; while the body of the growth in each case was roughened and firm.

Diagnosis of malignancy was made in one case at once, reliance being placed on the following points: The uterus was not normally movable, and was slightly enlarged, as made out bimanually; the pedicle grew directly out of the lower lip of the cervix, and above it could be felt the os distinctly. No other growth would have been situated here. A polypus or a papilloma of that shape would have come out of the os. The whole tumor except the pedicle was covered by nodules the size of those on a blackberry, and was not smooth to the touch. No impression of flexibility or elasticity was conveyed to the finger, the whole growth having that indescribable dense feeling which is easily recognized as belonging to this class of growths.

At the operation, as soon as the lower lip was cut away with the scissors, and the cavity of the cervix thereby opened up, it was found filled with very firm cancerous nodules of the size of a buck-shot, or larger. This, of course, confirmed the diagnosis, but could not previously have been determined, for the os was not dilated at all.

In the other case, however, though the general resemblance was so great, the diagnosis of benign tumor rested on the fact that the pedicle, springing from somewhere within the uterus, came out of the os and expanded as a perfectly smooth stem, covered by smooth membrane, and giving the impression of a tough, homogeneous fibrous structure, which would bend and not break. The body of the growth was resilient, though firm, and indented on the lowest surface like a papilloma. The symptoms did not suggest malignancy, though they did not exclude it. They never do.

But it is in the very early diagnosis of epithelioma that we are most concerned. Though doubted by some writers, as Byford and others, there is very strong evidence to be brought forward in favor of the local and, as it were, traumatic origin of epithelioma. It seems in many instances to be a perverted effort of nature to repair an injury, as has been said by Emmet, and this gives a much greater significance to unhealed and irritated lacerations. Whether the theory of traumatic origin be accepted or not, it is not to be ignored that a man who has given as much attention to diseases of the cervix as has Emmet, should be able to say that he had never seen a case of epithelial cancer in a woman who had not at some time been impregnated.' Hofmeier, however, in his statistics of cancer of the uterus, speaks of 39 nulliparæ among a total of 812 cases.

The tendency of cicatrices to become the seat of morbid growths is well-known. The frequency of unrepaired lacerations, and the profound alterations of structure which often follow them, have led to careful microscopical study of the tissues which have been removed in the operations for repair, with the result of finding, as reported by Cushing, of Boston (*Annals of Gynecology*, April and June, 1888, etc.) to the Ninth International Medical Congress, several cases of undoubted cancer, which could not have been diagnosed from glandular hyperplasia and erosion by either sight or touch alone. This author has urged with great pertinency, that some cases of bleeding erosions in women of 50, or thereabouts, are undoubtedly beginning epitheliomata, and as the removal of such surfaces is a slight operation, it is worth doing and may be of the greatest importance. (*Annals of Gynecology*, June, 1888, preliminary article.) This he urges without admitting, as has been claimed by Ruge and Veit, that the transition stages of erosions into epitheliomas may be demonstrated, but the fact remains that some erosions are epitheliomas, and we cannot always tell which. It is unreasonable to say that every erosion should be removed by the knife or scissors, for we know most of them can be cured by proper treatment; but it seems justifiable, to say the least, to remove thoroughly all

those which are stubborn in resisting well-directed treatment.

In doubtful cases, much light may be obtained by removing a wedge-shaped piece for microscopical examination; for while malignancy cannot be thus excluded, it may be found. It cannot thus be excluded, for it has been shown that cases showing clinically evident signs of malignancy, and so diagnosed by excellent authority, still have failed to show typical characters under the microscope. (*Cushing loc. cit.*)

No harm is done by this excision of a piece. The bleeding would be readily controlled by an alum tampon properly inserted at the time, and if the disease should prove to be malignant under the microscope, operation would immediately follow.

ENCEPHALOID CANCER.—The early diagnosis of this disease is rarely, if ever, made. By the time obvious changes have occurred the disease has advanced so far as to have seriously infected neighboring glands and tissues, so that no thought of surgical removal is possible. This is particularly true when the body of the uterus is first involved. The usual point of origin is the lower end of the cervical canal in the submucous tissue. Ulceration destroys the mucous membrane, and vascular granulations appear. The whole cervix becomes hard, irregular and knotty, in a way that is simulated by no non-malignant disease. Irregular friable vegetations spring up and cover the whole lower end of the cervix. These bleed freely on being touched, and exude a watery offensive fluid, like the washings of raw beef. The further progress of the case, the infiltration of surrounding tissues and organs, the breaking down and sloughing, until all semblance of the normal configuration of the parts is lost, need not be here detailed.

Sarcoma of the uterus is not often met with. Its accurate diagnosis, either early or late, is usually impossible without the microscopic examination of a piece of sufficient size to show not only characteristic cells, but their relations to surrounding tissue. Scrapings may not be sufficient. It occurs in two forms: (a) *Circumscribed*, when it strongly resembles fibroid tumor, and constitutes the class formerly known as "recurrent fibroid." (b) *Diffuse*, when it involves the whole uterus, together with surrounding tissues and organs. The cardinal points in the diagnosis of sarcoma are, rapid growth, a few months only at times; cachexia, especially significant where there has been comparatively little loss of blood; extreme pain; the presence of serum in the freely flowing blood (which is not found in non-disintegrating fibroids, but is found in carcinoma); the soft, brittle, brain-like character of proliferating portions, if any can be felt. This separates it from carcinoma. Carcinoma is not so apt to form a circumscribed tumor. But, after all, the

practical point is the diagnosis of malignancy, for early removal is the rule in any form of growth.

Scirrhus and myxo-sarcoma present no early signs of individuality which need be considered here.

After all, there remain certain cases in which the early diagnosis of malignancy is practically impossible, and the decision for or against a radical operation becomes a matter of great anxiety to the physician. When the disease is not accessible at the cervix, but begins within the body of the uterus, or even at the internal os, the excision of a piece for examination is not practicable in ordinary cases. One is then obliged to wait, perhaps too long, for some definite guide. Such a case has just been troubling the writer. The uterus is small and soft. Pain is slight and recent. A most intractable pruritus, of two years' standing, is due to the cervical discharge. Except for a lining membrane too dark in color, the lower part of the cervix is about normal in structure; it is excavated, and admits the whole of the first phalanx of the finger, but a peculiar laceration partly, if not wholly, accounts for its patulous condition. The lining of the uterus is smooth, but just at the internal os, beyond the point where the finger-tip stops, the curette finds little elevations, entirely too tough and gritty to make the mind easy. This patient has been closely watched and carefully studied. I shall proceed at once to remove the suspicious tissues, but the decision has not been an easy one to make.

Even later on, diagnosis may not be easy.

In another case at present under the writer's care, the portion of the uterus accessible from the vagina is soft and not nodular. There is no bleeding, and no discharge, pain, or other symptom which cannot be partially accounted for by a well-defined stricture of the rectum and its consequences. Bimanual examination is practically negative, since the true pelvis is choked by a smooth mass cementing in the uterus. The vaginal roof is hard, smooth, unyielding, suggesting the results of a late confinement which had inflammatory sequelæ, but the stricture helps to throw light on the case. Even this is smooth, and not typically cancerous, so that the aggravating word "probable" must go down with the diagnosis of malignancy. Long since did observation show the writer that the brilliant and dogmatic diagnosis of tumors flourishes chiefly in the clinical lecture-room and in the journal reports of just completed operations.

Treatment.—This is, of course, eminently surgical. As in cancer of the breast, not every case of malignant tumor of the uterus is to be operated upon by any means. There is room for the exercise of much judgment. One fact, however, is established beyond all question; it is that years of life and great suffering may be saved by early and radical removal, especially of epitheliomas.

If the operation is not thorough, life is shortened by it, except in the later stages.

If the disease is still confined to the cervix and lower uterine segment, several operations may be made. One of the best is the amputation of the vaginal portion of the cervix (Schroeder so far), and then with a knife cutting out a cone-shaped piece from the body of the uterus, including the canal, following with the Paquelin cautery. This is the operation of Baker, of Boston. Emmet uses scissors, knife, and curette with Simon's spoon, to shell out the diseased tissue, and then, as far as possible, draws mucous membrane over the raw surfaces by stitches. Most operators apply either the Paquelin cautery or, as recommended by Marion Sims, chloride of zinc as a caustic, after as much tissue as possible has been cut away. The dangers after such operations are from hæmorrhage and septicæmia, but the mortality is small. There is a very strong ground for belief that the actual cautery lessens the risk of subsequent development of disease. It certainly retards it more than the knife if all is not removed. Total extirpation of the uterus is coming into prominence in this connection, and statistics are rapidly accumulating. By the use of compression forceps for the lateral vessels, instead of ligatures, the mortality of the operation has been enormously diminished in good hands, but the place of the operation in surgery of the uterus has not yet been definitely settled. There is very little to show its advantage in ultimate results over Schroeder's method of high amputation of the cervix, where the disease usually lies, especially if followed by clearing out the interior of the uterus, as advocated by Baker, of Boston. If the disease is just beginning, the safer operation is just as thorough. If the disease is further advanced, to remove the entire uterus is not to remove surrounding infected glands and tissues, and there are no statistics which show conclusively that the liability to return is less than in the other operation. On the contrary, while recent methods of total extirpation have undoubtedly greatly reduced the risk of death from the operation itself, and while as long a series as thirty without a death has been reported in one institution, the University Frauenklinik, at Berlin, yet a consideration of the after-history of these patients is strongly in favor of a partial operation.

Taking from Hofmeier's reports, 129 operations of both varieties at this hospital as available for study, because their after-history could be traced, it is found, as stated by Lusk,¹ that at the

end of the	first	year,	51	per ct. of the	partial	cases	remained	well.
"	second	"	46	"	"	"	"	"
"	third	"	42	"	"	"	"	"
"	fourth	"	41.3	"	"	"	"	"

¹ American System of Gynecology, ii, p. 630.

Again, at the

end of first	year	63.6	per ct.	of the complete cases	remained well.
second	"	24.1	"	"	"
third	"	26	"	"	"
fourth	"	not one living complete case remained.			

So, while brilliant operators, whose death-rate from the operation remains low, may be expected to advocate total extirpation of the uterus, it is likely that the majority of gynæcologists who are more interested in the freedom from recurrence than in the operation mortality, will await the evidence of further experience, now rapidly accumulating, before giving preference to this operation.

When, at the time of discovery, the uterus is found fixed, the vaginal vault infiltrated, and evident involvement of parts which cannot be removed; it is not wise to interfere, unless there be extensive hæmorrhage, extreme pain, or septicæmia from absorption of necrotic material. The same rule holds here as in cancer of the breast; there is an intermediate period, between an early and a late stage, when the highest good of the patient is to be secured by letting well enough alone; correcting fetor by injections of potass. permang., creolin, or hydronaphthol, lessening hæmorrhage by alum or dilute sub-sulphate of iron injections, maintaining the general strength as far as possible by strict attention to the problems of nourishment and good hygiene; securing sleep and comfort by chloral locally or opium by suppository, and waiting. There comes, however, a third stage, when surgical interference may be of great service. When the strength is being rapidly reduced by discharge, by severe hæmorrhage, or by septicæmic fever, the patient should be etherized, and the vegetations rapidly removed by curette or spoon, down to firm, if not sound tissue. A thorough application of the thermo-cautery will then not only arrest hæmorrhage, and lessen the subsequent danger from it, but will check further growth for a considerable time. During the curetting bleeding will be free, but this should be carried on boldly and rapidly until the vegetations have been removed, when it will either cease or be checked by the thermo-cautery. A tampon saturated with some styptic, such as alum, should, however, always be inserted after the operation, and the vagina filled with antiseptic non-absorbent cotton or strips of gauze. This will lessen the risk from sudden hæmorrhage, in the absence of the physician, and should be removed and replaced at proper intervals for several days. It is surprising how much temporary relief will follow for awhile, and existence is often made comfortable for a month or more, while the risk is very small.

For *cleansing purposes* in the general conduct of a case, an experience of a considerable number of cases in the cancer annex of the Home for Incura-

bles, among the out-patients of the University Hospital, and the St. Clement's Dispensary, as well as in private practice, leads to the preference of permanganate of potash solution. It is cheap, non-poisonous, unirritating, and effective. Creolin is now on trial, so far with very satisfactory results.

Hæmorrhage, if not controlled by alum, or other astringent, may often be arrested by pressure so applied by tampon as to bear directly upon surfaces, and not slide over them. If very considerable, it will call for the use of the curette and the hot iron.

For *pain* antipyrin has not proved very satisfactory, though not extensively tried. In one case it gave great relief to general nerve pains, but did not greatly affect the cancer pain. Cocaine is, of course, too transitory and too superficial in action.

Nothing will take the place of opium, guarded by atropia, in the relief of decided pain. Other drugs give much help in insomnia and restlessness when not caused by definite pain from nerve involvement. The opium habit when at length formed, and it may by care be long deferred, is by far the less among evils. No definite improvement in the case, as a whole, has ever seemed to follow the use of drugs given for the disease itself.

A *summary* may be made as follows:

a. Early diagnosis is all-important, and should not be deferred until gross changes have occurred.

b. Examination should follow slight suspicions from the treacherous character of the symptoms. If not conclusive, it should be made by a trained hand.

c. The microscope will sometimes detect before other means will.

d. Heredity is a doubtful cause, traumatic origin very probable.

e. Lacerations of the cervix, where the growths usually begin, should be repaired if causing irritation, and erosions should be cured. If erosions are stubborn, or otherwise suspicious, they should be pared off.

f. In epithelioma especially, the disease is at first local, and if taken early complete immunity is secured sometimes, and always great saving of time and suffering.

g. From an operative point of view, there are three periods in any form of malignant disease.

1. Early, when operation should be immediate and as radical as possible, without extirpation of the uterus.

2. Intermediate when, eradication being impossible, nothing should be done unless demanded by severe hæmorrhage or extreme pain. The length of this period is indefinite, and depends on the rapidity of growth.

3. Late, when scraping and burning may be done repeatedly, to palliate symptoms and retard growth.

DR. W. W. KEEN reported a case of
SIMULTANEOUS AMPUTATION OF BOTH ARMS;
RECOVERY.

For the notes of this case I am indebted to Dr. J. C. Heisler, then surgical interne at St. Mary Hospital, and is put upon record as a contribution, at least, to the statistics of multiple amputations.

Paul K., æt. 15 years, was run over by a street car, at 5 o'clock, P.M., on November 13, 1887. He was admitted to St. Mary's Hospital two hours later. The right hand, forearm and elbow, as well as the left hand and lower part of the forearm, were crushed; both clavicles, also, were fractured.

The boy had lost a great deal of blood before his admission, and was in profound shock when admitted; so grave was his condition that it was doubtful whether he would live through the night.

My colleague, Dr. J. B. Roberts, saw him late in the evening, and ordered whisky and digitalis.

At 10.45 P.M. his temperature was 97°; his pulse 120.

The next morning the temperature was 102.5°; pulse 142. At 1 o'clock P.M. his condition was very grave, but, as he had rallied from the shock, I decided to give him the only chance of his life by amputating both arms. The right arm was amputated below the insertion of the deltoid; the left forearm at its middle. The moment that the first amputation was done, during the dressing of that arm by my assistants the second was proceeded with, so as to lose as little time as possible. He bore the ether badly, and his pulse at times was almost imperceptible. Almost no blood was lost during the operations, the arm being Es-marched above, but not including, the crushed parts. Of course, the most careful antisepsis was carried out. There was no need for hot bottles, etc., as his temperature was well maintained. From the time of the operations his recovery was a perfectly steady one. For the first three days the morning and evening temperatures were about 100° and 102° respectively. From that time on it fluctuated between 99° and 100°, reaching the normal by the tenth day.

On the third day after the operation the anterior flap on the left forearm began to slough; by the end of a week a piece 2 inches transversely by $\frac{1}{2}$ an inch in the axis of the limb was completely separated. The gaping wound now exposed the end of the radius covered with granulations springing from both the periosteum and the medulla. In order to promote adhesion of the flaps extension was applied to them by means of adhesive strips, on which traction was made by a rubber band. This band extended to the end of a straight splint applied to the forearm, counter-extension being maintained also by adhesive plas-

ter which was tacked to the upper end of the splint. At the end of two weeks the lips of the wound were united, and the splint was taken off. The right stump healed kindly, all the sutures being removed by the twelfth day. The boy was up ten days after the operations, and was sent home six days later to come to the hospital as an out-patient until he was entirely well. He was finally discharged at the end of January. Two small circular sequestra separated from the ulna and the radius of the left stump, and were removed January 9th and 24th. The recumbent posture was the only treatment used for the fractured clavicles. They united very well, and with but little deformity.

DR. E. P. BERNARDY reported a case of

UNIQUE PRESENTATION OF A FÆTUS.

The patient who gave birth to this child was a primipara, æt. 18 years. I saw the case for the first time at 8 o'clock, April 8, 1889; the membranes had been ruptured four hours, the fœtus was presenting in the right oblique diameter; the presenting part seemed to be the breech, the right side deeper in the pelvic cavity than the left; the fingers could be hooked in what appeared the groin, but did not have the full feeling one would expect in breech. A sort of sulcus or fissure was in the centre of the presenting part. Passing the fingers further upward, the bone of the skull was detected. I thought that I had a double pregnancy, the breech of one presenting, and the head of the other imbedded in the chest of the first. External palpation showed the uterus divided in two by a deep dent in its fundus, a large body occupying the upper left portion, and a body occupying the lower portion of the right side.

I did not introduce my hand into the vagina, for the maternal parts (vulva) were rigid, and had not undergone any softening, and such examination would have undoubtedly caused a rupture of the perineum; the os was spasmodically contracted around the presenting part. The patient not having much pain, and having to deliver a hydrocephalic case, I left her for about two hours. On my return, the entire portion which you here see, was grasped by the vulva, and the child was delivered in this position. It will be seen that both shoulders presented fair and square, the neck, somewhat stretched, thrown forward on the chest, and the head, slightly twisted sideways, laying in a cavity in the chest; the arms laid on the top of the chest, right and left side, the head between. There was hardly any pain connected with the confinement.

This is a rare case; I cannot recall an instance of a similar presentation.

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR REGULAR CORRESPONDENT.)

Proposed Hospital for the Study and Curative Treatment of Insanity—Compressed Gas for the Removal of Warts—Experiments with Massage—The Medical Aspects of Life Insurance—Hysteria in the Male Identical with the Disease as seen in Women.

On the motion of Mr. Brudenell Carter the London County Council has appointed a committee "to inquire into and report to the Council upon the advantages which might be expected from the establishment, as a complement to the existing asylum system, of a hospital, with a visiting medical staff, for the study and curative treatment of insanity." The report of the committee will be awaited with much interest by all who devote attention to this most painful subject. It is thought that the authorities of the existing asylums are so much engaged in administrative work that they have little time for scientific study. In the proposed hospital, the primary duty of the visiting medical staff will be to investigate the conditions of insanity and to discover, if possible, more effectual remedies than any that have yet been found for one of the most grievous of human maladies. It is to be hoped that the suggestion as to a hospital will receive most thorough consideration, and that the committee will take care to obtain the very best advice that can be offered by the medical profession.

Dr. Benjamin W. Richardson, ever foremost in practical scientific medicine, has made a suggestion which is as interesting as it is novel. It is to use a jet of highly compressed gas as a cautery. It is known that accidents occur to workmen sometimes in factories where compressed gases are prepared or employed by such a jet impinging on any part of the body, and causing an injury of the same nature as a burn. Dr. Richardson turns this property to account, and suggests its employment for the removal of warts and small pendulous growths. It does not appear that he has carried out the idea in practice, but he intends shortly to do so. He points out its advantages over the cautery, heated wire or knife, in that it is less alarming and for the moment painless, as cold is an anæsthetic. He enumerates the gases which might be used and specifies chlorine as no doubt most effective. He, however, gives the palm to carbonic anhydride (CO_2) as most manageable, cheap, almost inodorous, not unwholesome and not inflammable, so that it can be used with artificial light. It is now a little over twenty years since Dr. Richardson introduced ether spray as a means of producing local anæsthesia. It remains to be seen whether the present suggestion

may not lead to an equally important weapon in the armory of the surgeon.

A medical man has kept four students under observation while they underwent a daily course of massage for twenty minutes. All four methods, viz.: effleurage, pétrissage, friction and tapotement, were brought into play at each operation. The general result was that in every case the appetite showed considerable improvement, not merely during the week in which massage was performed, but during the week following as well. Two of the patients increased in weight in the course of the week's massage, while two decreased; but, curiously enough, all showed a marked increase during the subsequent week. In every instance it was observed that the respiration became fuller and more frequent, while the beating of the pulse increased in rapidity when effleurage was in progress, decreasing when pétrissage was substituted.

For four nights Dr. E. Symes Thompson, the Gresham Professor of Medicine, interested as many people as the theatre of Gresham College would hold while he lectured to them on "The Medical Aspects of Life Assurance." Speaking on the insurance of young infants, the doctor said that certain offices existed which insured very small babies in such a manner that a very great temptation was put upon the guardians or parents of the children to hasten them out of the world. It was curious to note that in the places where mortality among infants was exceptionally high, the desire of parents to insure their children was very pronounced. As showing the enormous advantage that the totaller has of living long as compared with the general body of mankind, the doctor exhibited two statistical tables—one of the Rechabites and the other of the Oddfellows, from which it appeared that among the Rechabites the average sickness per annum was four days, the death-rate was one in 141, and the weekly payments were 5s. 9½d., while among the Oddfellows the average sickness was thirteen days, the deaths averaged one in 44, and the weekly payments amounted to 13s. 1d. What made the contrast more remarkable was the fact that the Rechabites admitted females as members, while the Oddfellows would have nothing to do with the ladies.

Dr. Adami considers that, for all practical purposes, hysteria in the male is identical in its manifestations with the disease as seen in women. He divides the cases into two classes, the first including those cases which were complicated by the occurrence of the so-called hystero-epileptic attacks, though, as suggested by Sir William Roberts, hysteroid attacks would be a better term. The second group consists of those attacked by hysterical hemiplegia or paraplegia. The male hysteric was rarely so emotional as the female; most often he is rather phlegmatic than emotional, and in him the attack of "grand hys-

teria" rarely or almost never, even in France, passed on to that series of exaggerated portrayals of emotions which Charcot had described as occurring in the most advanced female hystero-epileptics. The most usual period for hysteroid fits in the male is from 18 to 22. In the second class of male hysterics there might occur almost every variety of mono- or hemi-paraplegia, aphonia was frequent, though the face was not affected. There might be contractures, with diminished or increased tendon reflexes, various forms of anæsthesia and hyperæsthesia, and vaso-motor disturbances with affection of the muscular sense and the special senses, notably retraction of the field of vision. Such cases most frequently resulted from injury, notably railway accidents, though not a few, as in women, were apparently related to disturbances of the generative function.

Dr. Horatio Donkin has married the widow of Professor E. H. Palmer, the distinguished Orientalist and traveler. Dr. Donkin, it may be remembered, was Professor Ray Lankester's principal assistant in the exposure in 1876 of Dr. Slade, the Spiritualist.

Medical men in general are probably not aware that in France, at least, the doctor's claim on the estate of a deceased patient has precedence of all others. Even the landlord's claim for arrears of rent must yield to the doctor's fee. The courts have recently decided that, as it is an imperative right of humanity that the dying should have the necessary care and treatment, such attendance should be paid for before all the other debts.

A £10,000 fee has, it is stated, been given to Dr. Freyer, a surgeon in India, for his successful treatment of the Nawab of Rampur.

Trichina in muscle can be detected, it is stated, by placing thin slices of the suspected meat in a test tube with pepsin, water, and a little hydrochloric acid. After a few hours' digestion in a warm place, the parasite will become so loose and prominent that it can be easily picked out with a needle and identified under the microscope.

An obituary announcement in a daily paper recently included the remark that E. P. wishes to express his thanks to the Superintendent of the hospital and the many doctors who attended him during his last illness.

G. O. M.

DOMESTIC CORRESPONDENCE.

Shall the Section of Obstetrics and Diseases of Women be Abolished?

Dear Sir:—At the last meeting of the Association a member introduced an amendment to the By-Laws looking to the abolition of the Section of Obstetrics and Diseases of Women; relegating

the former branch to the Section of Pediatrics, and the latter to the Section of Surgery. Inasmuch as the proposed amendment will be acted upon at the approaching meeting at Newport it should receive very careful consideration, and particularly since it involves a radical change in the working organization of the Association. That such consideration may be had I beg to direct attention to a few facts bearing upon the action contemplated by the amendment indicated.

The Section of Obstetrics and Diseases of Women has for a number of years been one of the most largely attended and most active of the various Sections of the Association. The papers annually presented there come from all parts of the Union, by men eminent in these departments of medical science, and a large number of practitioners annually attend and participate in the discussions. The programme of this Section, as published for the approaching meeting, is the largest in number of papers and most comprehensive in the range of subjects of any of the Sections, embracing forty-eight (48) papers, many of the authors being of National, and some of world-wide reputation. Hence it cannot be justly claimed that the Section as now organized is wanting in efficiency. Let us then consider some facts bearing upon the relation of obstetrics and gynecology, which naturally associate these two departments scientifically and practically, and which, at the same time, show that the separation would necessarily impair the cultivation of both by the members of the American Medical Association.

The intimate relation and connection of these two branches has long been recognized in our system of teaching, both in this country and in Europe; in practice, in medical literature, and in the organization of societies, local and national. In most medical schools in America and Europe the two branches are taught jointly. *The American Journal of Obstetrics and The Annals of Gynecology* are devoted to the joint cultivation of these associated departments of medical science and practice. The American Gynecological Society, and that energetic organization recently instituted, the American Association of Obstetricians and Gynecologists, not to mention the Obstetrical Societies of Philadelphia, of New York, of London, and other cities attest the same fact.

Not only are these branches united in our system of education, in our literature, and in our society organizations, but in practice. One of the most distinguished of American laparotomists is the Physician-in-Charge of a model maternity hospital, and almost all American gynecologists are connected with public obstetrical services. In many of the most admirable European institutions the obstetrical and gynecological departments are under the same roof and conducted by the same

head.¹ In private practice most of the leading gynecologists are habitually engaged in obstetric practice as attendants and consultants.

But there are weightier reasons still why this important Section of the Association should not be divided. The greatest triumphs of modern obstetric science and the most important improvements in obstetric practice consist in the application of the principles of abdominal surgery to the lying-in woman. The technique of modern obstetric practice and that of pelvic surgery are formulated upon the same principles and require the same line of study and training for their mastery. The woman after labor is exposed to the same great danger of sepsis as the woman after ovariectomy. To execute the improved Cæsarean section requires all the skill and knowledge essential for the most difficult intra-abdominal operation and a thorough familiarity with pregnancy and the puerperal state.

Most of the operations in gynecology are for conditions the result of, and directly connected with, pregnancy and parturition, and of necessity involve thorough knowledge of those conditions.

For these reasons both the study and practice of obstetrics and gynecology must remain so correlated that they can only be successfully cultivated conjointly. To abolish this Section of the Association, now so successfully conducted, would scatter the members into other crowded Sections, and do the cause of science and the Association serious injury.

* * *

MISCELLANY.

THE CRONIN ASSASSINATION.—The Chicago Medical Society adopted the following resolution at a meeting at the Grand Pacific Hotel June 3d :

WHEREAS, Dr. P. H. Cronin was recently decoyed from his office and assassinated; and

WHEREAS, Dr. Cronin, although not a member of the Society, was a regular member of the profession, of recognized ability;

Resolved, That the death of Dr. Cronin, occurring as it did, while the Doctor was in the intent of extending to a sufferer the benefices of our art, is a matter of deep regret to the members of the Society; and

Resolved, That the Secretary be instructed to extend to the relatives and immediate friends of the deceased the sympathy of the fellows of this body.

THE 75,000 EXTRA EDITION.—The "Extra Edition" of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has come to us full of interest and information. In a special article by Dr. Wm. G. Eggleston, of Chicago, it gives a tabulated list of the various medical colleges in the United States, their date of organization, matriculation and graduation requirements, etc., and adds facts which deserve the notice and careful consideration not only of practitioners, but students of medicine, and those contemplating entering this field of professional life. Much is being said upon the subject herein treated, the

laudable intent of which is to elevate the standard of medical education throughout our country, and we add our voice to the movement, hoping that some steps may be adopted which may at once check the increasing tendency of many little competent and poorly prepared to undertake a work of so great importance and responsibility as the practice of medicine, and aid our colleges, while denying none worthy, in sending out only graduates well equipped for the sacred duties of physicians.

THE JOURNAL announces the annual meeting of the American Medical Association to be held at Newport, R. I., June 25, 26, 27 and 28, giving a programme of the same, and adds attractive views illustrating this beautiful city by the sea. We join in wishing that the convention may be as pleasant and profitable as those of the past.—*The Atlanta Medical and Surgical Journal*.

POSTPONEMENT.—The Annual Meeting of the Pennsylvania State Medical Society has been postponed until the first Tuesday in September in consequence of the recent disastrous flood in the Conemaugh Valley.

THE MCLEAN COUNTY (ILL.) MEDICAL SOCIETY.—This Society met in regular session at the office of Drs. Darrah & Corley June 3d. There were present, Drs. H. Parkhurst, T. W. Keys, G. R. Smith, H. A. Winter, F. J. Parkhurst, N. F. Jordan, J. B. Taylor, A. T. Darrah, W. A. Elder, L. E. Spear, C. J. Corley, F. J. Welch, W. H. Reedy, W. L. Pollock, C. C. Sater, H. F. Ballard. The session was devoted to a discussion of the physiological action of anti-febrin and antipyrin. The discussion was general and very interesting. It was conceded by all that these new remedies were not only useful as antipyretics, but were of much value in a variety of diseases, especially those of a rheumatic and neuralgic character. The fact was developed that the remedies under consideration were powerful sedatives and required great caution in their use. Dr. Rhoda Galloway, a graduate of the Woman's Medical College, Chicago, was elected to membership. Dr. J. B. Taylor extended an invitation to the Society to attend the commencement exercises of the Wesleyan University, June 13, to hear the address of Dr. M. L. Fullinwider, of Eldorado, Kan. The invitation was accepted, and the Society voted to attend as a body. The application of Dr. H. F. Ballard, of Chenoa, for membership, was received and referred to the Board of Censors. The President appointed Drs. J. B. Taylor and C. J. Corley as essayists for the September meeting, and the Society adjourned to meet the first Monday in September.

THE meeting of the Mitchell (Ind.) District Medical Society will be postponed till July 18, 19 and 20th, at West Baden, Ind., on account of the meeting of the American Medical Association.

IN the Bombay Presidency no fewer than 1,168 human beings were destroyed by snakes during 1887, and over 300,000 venomous snakes were destroyed.

THE ODOR OF SOUND MEAT.—In the normal state the flesh of every animal has its own characteristic odor. Beef has a special insipid kind of smell, modified by the different modes in which the animals have been fed. Thus it is stated that the flesh and milk of cattle in the polar regions has a fishy odor, because the absence of pasture obliges the inhabitants to feed their oxen and cows on fish. Veal smells of milk, mutton of wool and sometimes grease. The normal odor of pork is insipid and inoffensive, but when the pigs are fed on offal the flesh has a pale cachectic hue, and an offensive smell and taste. The odor of poultry fed on corn differs from that of poultry artificially fattened. In a diseased state, meat emits a typical odor resembling the breath of feverish patients. This odor is particularly noticeable beneath the shoulder, and in the muscles of the inner side of the leg. The odor should be carefully noted immediately

¹ For example, the admirable Frauenklinik conducted by Professor Freund, in Strassburg, and that by Professor Winckel, in Munich.

after the incision is made. This should be done by the inspector himself. When diseased meat is roasted it emits a strong and offensive smell. The fever odor is particularly marked in the case of animals which have suffered from peritonitis, charbon, morbid symptoms following parturition, or with ordinary acute disease. In such cases the smell is recognizable at once, and it is unnecessary to make any incision. "Feverish" meat is always unfit for consumption.—*The Annals of Hygiene*.

THE MERCURY SALTS are among the most important of the substances affected by actinic light. The conversion of the *mercurous*, or non-poisonous, to the *mercuric*, or poisonous salts, is likely to be attended with fatal results, when the change has been sufficiently great. Calomel, therefore, should be kept in amber bottles away from light to prevent its being converted into the poisonous corrosive chloride.

DEATH OF WARREN DE LA RUE.—The *National Druggist* says: This man, noted alike as an astronomer, chemist, electrician, physicist, photographer, and pharmacist, and as an investigator and writer in almost all domains of scientific research, died at his home in Guernsey, April 19, aged 74 years. In his early years he succeeded his father as the head of the Paris manufacturing house of Thos. de la Rue & Cie., and continued in this position until 1880, when he retired. His published works embrace almost the entire domain of science. In pharmacy his greatest, or at least best known, were his investigations of cochineal and (in conjunction with Müller) of rhubarb and its constituents, and to him, with Müller, belongs the discovery and isolation of chrysophanic acid. The notice of his death in the *Pharmaceutical Journal and Transactions* says: "But his name is most associated with the application of photography to the recording of celestial phenomena, on which subject he produced a large number of papers. In connection with Dr. Müller, also, he carried on a series of investigations upon the electrical discharge, using a battery of 15,000 chloride of silver cells, the results of which were given in a collected form in a lecture at the Royal Institution in 1881. Amongst the many honorary posts filled by Mr. de la Rue may be mentioned those as honorary Secretary, and afterwards President of the Astronomical Society, President of the Chemical Society for two separate periods, President of the London Institution, and Secretary of the Royal Institution. In addition he was a member of numerous foreign learned societies.

LETTERS RECEIVED.

Dr. R. J. Dunglison, Philadelphia; Dr. S. T. Armstrong, U. S. M. H., Stapleton, N. Y.; Dr. E. S. McKee, Cincinnati; Dr. Herbert B. Alleyn, Philadelphia; Drs. Lewis & Thompson, St. Louis; Dr. A. W. Mann, Oak Grove, Mo.; Dr. J. O. Dawson, Lincoln, Neb.; Dr. W. D. McGowan, Ligon, Pa.; Dr. B. Weltner, New York; Dr. G. H. Gibson, Breckenridge, Col.; Dr. Hugh Hanna, Prosperity, Pa.; Frank, Kiernan & Co., New York; Trommer Extract of Malt Co., Fremont, O.; Dr. L. S. McMurtry, Danville, Ky.; Lambert Pharmacal Co., St. Louis; Sanitarium, Battle Creek, Mich.; Dr. Chas. F. Disen, Minneapolis; Johnson Eliot, Washington; F. A. Davis, Philadelphia; Dr. Sauerhering, Wausau, Wis.; Dr. J. W. Smith, Pilot Point, Tex.; H. N. Jarchow, New York; Dr. W. J. Asdale, Pittsburgh; Dr. J. M. Dunham, Columbus, Ohio; Dr. C. P. Frost, Hanover, N. H.; Dr. Karl von Ruck, Asheville, N. C.; E. Bair, Louisville, Ky.; J. L. VanSchoick, Perrineville, N. J.; Dr. G. W. Burton, Mitchell, Ind.; Upjohn Pill and Granule Co., Kalamazoo, Mich.; Dr. O. Eastland, Wichita Falls, Tex.; Dr. J. M. Farrington, Birmingham, N. Y.; Dr. H. Longstreet Taylor, Cincinnati, O.; Dr. John B. Meazie, Claypool, Ind.; Joseph Swindell, Washington.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 25, 1889, to May 31, 1889.

By direction of the Secretary of War, Major John S. Billings, Surgeon, is authorized to make, in connection with his duties as supervisor of mortality and vital statistics of the eleventh census, such journeys as may be ordered by the superintendent of the census, provided that, in each case, the approval of the Surgeon-General shall be obtained; and provided further, that the journeys shall involve no charge against the fund for transportation of the Army. Par. 12, S. O. 122, A. G. O., May 27, 1889.

Major Henry McElderry, Surgeon U. S. A., is granted leave of absence for one month, to take effect upon completion of his duties as a member of the Army Medical Examining Board in New York City. Par. 4, S. O. 117, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, May 23, 1889.

Major J. H. Patzki, Surgeon, is granted leave of absence for twenty-one days. Par. 1, S. O. 44, Hdqrs. Dept. of Ariz., Los Angeles, Cal., May 18, 1889.

Capt. Paul R. Brown, Asst. Surgeon, is granted leave of absence for six months on account of sickness, by direction of the Secretary of War. Par. 13, S. O. 122, A. G. O., May 27, 1889.

Capt. Walter W. R. Fisher, Asst. Surgeon, leave of absence for one month granted by S. O. 30, c. s., Dept. of California, is extended fifteen days. Par. 3, S. O. 37, Hdqrs. Div. of the Pacific, San Francisco, Cal., May 22, 1889.

First Lieut. Ogden Rafferty, Asst. Surgeon U. S. Army, ordered with troops for field practice to Galveston, Texas, where troops will camp for such time as may be hereafter directed. Par. 1, S. O. 29, Hdqrs. Dept. of Texas, San Antonio, Tex., May 13, 1889.

By direction of the acting Secretary of War, First Lieut. James D. Glennan, Asst. Surgeon, is relieved from duty at Willett's Point, N. Y., to take effect June 1, 1889, and will proceed to Ft. Riley, Kan. Par. 5, S. O. 121, A. G. O., May 5, 1889.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending May 25, 1889.

Surgeon W. H. H. Hutton, to proceed to New Orleans, La., and inspect unserviceable property. May 25, 1889.

Surgeon George Purviance, detailed as chairman Board of Examiners. May 22, 1889.

Surgeon H. W. Austin, detailed as member Board of Examiners. May 22, 1889.

Surgeon John Godfrey, detailed as recorder, Board of Examiners. May 22, 1889.

P. A. Surgeon John Guitéras, resignation accepted, by direction of the President, as tendered, to take effect April 30, 1889. May 11, 1889.

P. A. Surgeon S. T. Armstrong, granted leave of absence for thirty days. May 11, 1889.

STATE MEDICAL ASSOCIATION MEETINGS IN 1889.

STATE.	SECRETARY'S NAME AND ADDRESS.	TIME AND PLACE.
Colorado.	H. W. McLauthlin, Denver.	Denver, June 18.
Dakota.	H. E. McNutt, Aberdeen.	Mitchell, June 20.
Delaware.	J. E. Ellegood, Laurel.	Dover, June 11.
Maine.	C. D. Smith, Portland.	Portland, June 11.
Massachusetts.	F. W. Goss, Boston.	Boston, June 11.
Minnesota.	C. B. Wetherle, St. Paul.	Minneapolis, June 20.
N. Hampshire.	G. P. Conn, Concord.	Concord, June 18.
New York.	E. D. Ferguson, Troy.	New York, Sept. 25.
Oregon.	C. C. Strong, Portland.	Portland, June 11.
Rhode Island.	G. D. Hershey, Providence.	Providence, June 13.
Vermont.	D. C. Hawley, Burlington.	Brattleboro, June 27.
Virginia.	L. B. Edwards, Richmond.	Burlington, Oct. 10.
West Virginia.	J. L. Fullerton, Charlestown.	Roanoke, Aug. or Sept.
		W. Sulphur Springs.

THE

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, JUNE 15, 1889.

No. 24.

ORIGINAL ARTICLES.

THE COMPARATIVE RESULTS OF LITHOTOMY, LITHOLAPAXY AND LITHOTRITY IN ONE HUNDRED OPERATIONS FOR STONE.

BY EDMUND ANDREWS, M.D., LL.D.,

PROFESSOR OF CLINICAL SURGERY IN CHICAGO MEDICAL COLLEGE,
AND SENIOR SURGEON OF MERCY HOSPITAL.

The new instruments and modified methods introduced by Bigelow, of Boston, for crushing and evacuating vesical calculi seemed at first dangerously severe. In litholapaxy one must often work with his instruments in the bladder for more than an hour, and it naturally impressed surgeons as a rash and perilous procedure. I confess to having felt strong fears in this direction, and many other surgeons were even more timid in the matter than myself. Prof. Paul F. Eve seems to have avoided the new plan almost entirely, and Prof. James R. Wood, of New York, shortly before his death, showed me his collection of vesical calculi, and informed me that he had just cut for stone the ninetieth time, and had never crushed in a single instance.

However, experience soon showed that the bladder is far more tolerant of even a whole hour or more of careful instrumentation, which thoroughly clears it of debris, than of incision, or of repeated brief crushings which leave a mass of sharp-angled fragments in the cavity for days together. In short, the danger of litholapaxy has proved, in my practice, decidedly less than that of the old style of lithotritry, or of lithotomy. All hesitation has vanished. I have now operated for stone one hundred times; fifty-five times by cutting, with seven deaths; six times by the old style of lithotritry of Civiale and of Sir Henry Thompson, with one death; and forty times by Bigelow's litholapaxy, with one death. The following is a summary of the cases:

SUMMARY.

Total number of cases of lithotomy, 55; deaths, 7; mortality 13 per cent.

Lithotomy below age of puberty, cases, 26; deaths, 2; mortality 8 per cent.

Lithotomy above age of puberty, cases, 29; deaths, 5; mortality 17 per cent.

Lithotritry after the manner of Sir Henry Thompson, cases, 6; deaths, 1; mortality 17 per cent.

Litholapaxy after the manner of Prof. Bigelow, cases, 40; deaths, 1; mortality 2.5 per cent.

Of the 101 operations above tabulated, two only were upon females.

It will be observed that the total number of operations in the tables is 101, instead of 100. This is in consequence of including one litholapaxy in addition to those performed with my own hands, which was done on a hospital patient by my colleague in my temporary absence.

The increase of safety by the introduction of litholapaxy is immense, and, in my opinion, almost all adult operations for stone in the bladder should be done by this method. However, let no man delude himself with the notion that this rule has no exceptions. The following classes of cases still require the cutting operation:

1. All children whose urethræ are too small to admit small-sized lithotrites.

2. All cases where the stone is too large to be grasped by the instrument. Case 14,714 was of this character. Having a diameter of 9 centimetres, the jaws of the instrument could not grasp it, and I was obliged to proceed by suprapubic lithotomy. The peculiarities of this case give it special interest. It turned out that there was a thick mass of connective tissue indurated by inflammation between the bladder and the upper border of the pubis. I first introduced into the bladder the French instrument called the *sonde à dard*, in order to use it as a guide to the suprapubic incision. It is made like a strong silver catheter, but carries in its canal a curved steel dart or stiletto with a groove on its surface. The operator inserts it into the bladder and, pressing the tip against the front of the viscus, pushes the dart forward till it pierces the tissues and appears in the bottom of the primary incision. The bistoury is then entered into the groove and guided by it into the bladder. In this case the dart would not pierce the tough mass of tissue, and I was obliged to go in with the scalpel alone. I finally found the cavity with the stone in it, well back against the rectum, after a dissection of alarming depth, and then extracted the immense calculus without further difficulty.

3. In a few cases mulberry calculi are so hard

LITHOTOMY.

No. of Case in Record.	Sex.	Age. Years.	Description of Stone.	Operation.	Result.	REMARKS.
54	Male.	7	Triple phosphate, diameter 3x4½ cm.	Lateral lithotomy.	Died.	Septicæmia; this was before the advent of [antiseptic methods.
20	"	38	Phosphatic, diam. 3x5 cm.	"	Cured.	"
271	"	11	" " 2x8 " cylind'cal form	"	"	"
1,294	"	5	" " 3x5 "	"	"	"
1,720	Fem.	55	" " 1x3 "	Cut forward to pubis and then to left.	"	" followed.
1,746	Male.	65	" " 2 "	Lateral lithotomy.	Died.	Sinking with exhaustion before operation.
1,755	"	35	" " 2 "	"	Cured.	[Some hæmorrhage.
1,766	"	6	" " 2 "	"	"	"
1,783	"	35	" " 4x5 "	"	"	Discharged in 25 days.
1,785	"	5	" " 4x5 "	"	"	"
1,789	"	7	" " 4x6 "	"	"	"
5,176	"	20 mos.	" " 2 "	"	"	"
5,700	"	12	" " 3x6 "	"	Died.	[after operation. Lived in septic apartments. Died 77th day
5,176	"	2	" " 2 "	"	Cured.	Had cystitis from birth. Stone supposed to [exist before birth.
6,060	"	3	" " 1½ "	"	"	"
6,151	"	35	" " 3 "	"	"	"
6,550	"	52	Two calculi.	"	"	Two calculi. Went home in 21 days.
6,836	"	"	Mulberry calculi, weight 13 grams.	"	"	Discharged in three weeks.
6,930	"	"	Phosphatic, diam. 3 cm.	"	"	Discharged in four weeks.
7,017	"	40	Two phosphatic calculi.	"	"	Discharged in four weeks.
7,526	"	4	Two small calculi.	"	"	"
7,799	"	2	Diameter, 4 cm.	"	"	Discharged in four weeks.
7,993	"	5	Phosphatic calculi, diam. 3x4 cm.	"	"	Discharged in three weeks.
8,497	"	58	9 Phos. calculi, combined wt. 176 grams.	"	"	Discharged in six weeks.
8,515	"	11	Calculus in memb. portion of urethra 5 cm. long.	"	"	"
8,535	"	23	"	"	Died.	Lived eight days.
8,584	"	7	"	"	Cured.	"
7,626	"	4	Diameter 4x5 cm.	"	"	"
7,628	"	14	Mulberry, diameter 3 cm.	"	"	"
7,721	"	35	Phosphatic, diameter 5x5½ cm.	"	Died.	Bladder ulcerated and bled freely from its [coats.
8,727	"	25	" " 4x5 "	"	Cured.	[cerated cavity below prostate.
6,094	"	2	" " small "	"	"	"
6,171	Adult.	"	" " multiple.	"	Died.	Lived a few weeks. Stones were in an ul-
7,078	"	"	Mulberry, diameter 3 cm.	"	Cured.	Discharged in five weeks.
9,270	"	3	Diameter 1 cm.	"	"	"
9,271	"	9	Mulberry, diameter 3 cm.	"	"	Discharged in five weeks.
9,337	"	2½	Diameter 3 cm.	"	"	Discharged in one week.
9,453	"	66	" " 4x5½ cm.	"	Died.	Sclerosis of spinal cord.
9,475	"	36	Phosphatic, diameter 1½x2 cm.	"	Cured.	Discharged in five weeks.
9,614	"	71	Diameter 2x5 cm.	"	"	The following year took cystitis and died; no recurrence of stone.
10,341	"	73	Long slender calculi, accreted around the stem of some vegetable.	"	"	Discharged in three weeks.
10,481	"	22	Mulberry, diameter 4 cm.	"	"	"
10,677	"	2	Diameter 1x2½ cm.	"	"	[globular in shape.
10,752	"	62	Three phosphatic stones.	"	"	Disease recurred, forming several new stones,
10,977	"	62	Diameter 3x4 cm.	"	"	"
11,143	"	5½	" " 4 "	"	"	Discharged in twelve days.
11,318	"	33	" " 3x6 "	"	"	Discharged in three weeks
11,852	"	11	" " 3x4 "	"	"	Discharged in two and one-half weeks.
11,990	"	14 mos.	" " 2x3 "	"	"	Discharged in two weeks.
12,086	"	69	Weight 19 grams.	"	"	Discharged in two weeks.
13,589	"	4	Diameter 1½ cm.	"	"	[and then lithotomized.
13,605	"	16	Mulberry, diameter 3½ cm.	"	"	First broke a strong lithotrite on this stone, Left for home seventh day.
14,437	"	2	Weight 6 grams, diameter 3 cm.	Median	"	Discharged and went home 19th day. Lith-
14,714	"	18	Phosphatic, weight 128 grams, diameter 9x6x3½ cm.	Suprapubic	"	olopaxy attempted, but lithotrites could not seize so large a diameter.
13,743	"	64	Phosphatic, accreted on a bullet lodged near the prostate gland.	Rem'd by incision, not opening blad'r	"	Carried this bullet and calculus over 20 years before removal; ball rec'd in Atlanta camp'n.

LITHOTRITY BY MULTIPLE SITTINGS.

5,366	Male.	Adult.	Concreted around roll of chewing gum.	10 sittings, 19 days.	Cured.	Discharged in four weeks.
10,230	"	68	Phosphatic, diameter 1 cm.	5 sittings, 3 weeks	"	Discharged in four weeks. Had been lithotomized twenty years before.
10,227	"	50	Diameter 3 cm.	11 sittings.	"	"
10,027	"	64	" " 2 "	10 sittings, 7 weeks	Died.	"
10,197	"	Adult.	Phosphatic, diameter 2 cm.	3 sittings, 8 days.	Cured.	"
10,239	"	"	Diameter 1½ cm.	11 sittings, 23 days.	"	"

that they cannot be crushed without breaking the lithotrite. Case 13,605 was of this sort. Seizing it, I was unable to break it with the utmost strength of both hands applied to a strong lithotrite. Calling an assistant to take hold with me we commenced to exert our full force, when a metallic clink from within the bladder told that the instrument was broken. The shank of the female blade was cracked half across, and distorted enough to prevent closing the jaws again. Here was a dilemma. The instrument could not

be drawn out unless closed, and for a time it was probable that it would be necessary to incise freely upward through the perineum, pry the open jaws of the instrument downward through the incision, and file off the shank. However, I succeeded after a time in slipping the blades past the hitch, and closing the jaws. I then withdrew the lithotrite and proceeded at once to remove the stone by lateral lithotomy. The patient recovered, but it was proved that two strong men are too much for one lithotrite. I think it probable,

LITHOLAPAXY, OR EVACUATION OF STONE AT ONE SITTING

No of Case in Record	Sex	Age Years	Description of Calculus	Operation	Result	REMARKS
10,752	Male	62	Small multiple stone after previous lithotomy	Litholapaxy	Cured	Some very small ones came out uncrushed with the fragments
10,752	"	63		Pump'd out 7 small globular stones without crushing	"	Recurrence of new stones in same patient Not old fragments
10,833	"	71	Phosphatic, weight 69 grams	Operation took 1 hour 32 minutes	"	Recovered easily
11,170	"	31	Small	Extracted without cutting or crush'g	"	
*	"	70	Very Small	Litholapaxy	"	
10,782	"	30	Mulberry, diameter 2 cm	"	"	Rode three miles on sixth day
10,814	"	70	Diameter 4 cm	"	"	Discharged in six weeks
10,821	"	58	" 4 "	"	"	Operation, 25 minutes
10,825	"	66	Mulberry diameter 3 cm	"	"	" 29 " Recurred five mos later
10,837	"	63	Phosphatic, " 2½ "	"	"	Operation, 33 minutes
10,860	"	28	Hard, diameter 2½ cm	"	"	" 29 "
11,348	"	48	Diameter 1½ cm	"	"	" 25 " [small stones
11,367	"	Adult	" 8 millimetres	"	"	Has in 6 months before operation, passed 6
11,610	"	27	" 1½ cm	"	"	Discharged in ten days
11,660	"	38	" 2 "	"	"	Operation, 40 minutes discharged in 2 wks
11,827	"	66	Phosphatic diameter 4½ cm	Ord'ry litholap'x'y	Died	Lived 36 days Cause of death obscure
11,896	"	65	Two stones	"	Cured	
12,023	"	65	Small	"	"	Recurrence after a previous litholapaxy
12,113	"	66	"	"	"	Recurrence of Case 10,825
12,145	"	30	Diameter 4 cm	"	"	Discharged in eight days
12,327	"	22	Weight 5 grams	"	"	Discharged in 8 days, operation, 33 minutes
12,355	"	30	Weight 5 grams	"	"	Discharged in 30 days
14,841	"	31	Very hard mulberry cal, diam 3½ cm	"	"	Required the utmost strength of the hands to break the calculus
13,457	"	67	Diameter 3 mm, weight 13 grams	"	"	Operation lasted 40 minutes
13,485	"	48	Mulberry calculus, diam 1 one fifth cm	"	"	" 20 "
13,508	"	66	Wt, dr, 4¼ grams diam 2½ cm, phos	"	"	" 30 "
13,598	"	61	Phosphatic soft, diam 2 cm	"	"	Found and removed a small piece some days after first operation
13,604	"	50	Rather small	"	"	Six months later albuminuria commenced
13,724	"	65	Phosphatic soft, diameter 2 cm	"	"	Washed out small piece 13th day, went home
14,406	"	24	Nucleus of chewing gum, wt 6 grams	"	"	Went home cured 8th day [15th day
14,448	"	17	Phosphatic nucleus of gum wt 7½ grms	"	"	Discharged cured 7th day
14,548	"	40	Diameter 1¼ cm	"	"	" 9th day
14,577	"	54	" 2½ "	"	"	" 6th day
14,691	"	Adult	Weight 68 grams, diameter 4¼ cm	"	"	" 16th day
14,713	"	60	Weight 2 grams	"	"	" 6th day
14,788	"	22	Small and very hard	"	"	Left for home 13th day
	"	71	Several small stones	Evac'ted with tube without crushing	"	Subsequently got a new stone too large for tube and died refusing operation
13,746	Fem	36	Phosphatic, diameter 2 cm	Litholapaxy	"	Done by my colleague in my absence from hospital
13,744	Male	66	Small size	"	"	Rapid recovery
13,745	"	63	Small, white globular	Pumped out by large tube with out crushing	"	

* Record lost

also, that a stone might sometimes be found accreted around some smooth piece of steel or iron previously slipped into the urethra by the patient and lost in the bladder. The calculous mass could easily be crushed loose from the steel, but unless the surgeon could succeed in seizing the latter by the end, he could not withdraw it, and might possibly have to cut for it. Two or three times I have found stones containing rolls of chewing gum for nuclei. The gum is slightly pasty, but it breaks into pieces small enough to come readily out through the tubes. I judge that we ought to have a lithotrite a little thicker and stronger than any now made to apply to unusually hard stones.

4. Deformities of the bladder sometimes render it impossible to seize a stone. The deformity may consist of a sacculus too deep to be explored by the jaws, or a stone may be hid behind a prominence of the prostate, so that a lithotrite cannot reach it. I was once called in council by a skilful surgeon who, in attempting lithotomy, found this difficulty to such an extent that, though he had already cut the patient, he could not seize the stone with his lithotomy forceps, because they happened to be straight. My own forceps, which are curved, seized it without much difficulty.

5 Strictures of the urethra forbid litholapaxy, unless they are first overcome. Case 14,841 had this obstruction. It was first divided by Maisonneuve's stricture cutter, and the litholapaxy successfully performed about a week later.

These various obstacles to litholapaxy are rarely insuperable in adults, so that out of forty-two proposed operations of this sort, only two had to be changed to lithotomy; yet these two are enough to show that a surgeon should always go to a case prepared for either operation.

Case 8,497 (lithotomy) was remarkable for containing nine stones, of which six were of large size and accurately fitted to each other by attrition, as shown in the annexed cut. Their combined weight was 176 grams.

Prof. Bigelow's main improvements are thoroughly established, at least until something better can be devised; yet, excellent as it is, litholapaxy in its present form has certain objectionable features which are common to all efforts to evacuate the crushed fragments by a to and fro current. The bulb of his apparatus is first compressed, driving some water into the bladder, and then allowed to expand and draw it out again. This expansion draws a stream of fragments with

it, some of which reach the bulb; but, as the suction lasts only during the instant of the bulb's expansion, the current ceases and stops a long row of fragments in the tube, only to drive them swiftly back into the bladder at the next compression. By this churning to and fro many sharp-angled pieces are alternately drawn out of the bladder and shot back into it scores of times before they finally escape into the bulb, thus irritating the bladder by the pelting of sharp fragments, and by the constant and prolonged repetition of forced distensions.

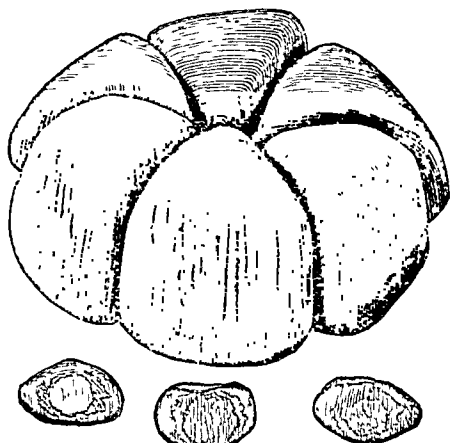


Figure 1.

Evidently we need, not a churning to and fro, but a continuous current, always in one direction, but, as the outflow tube must be large, to allow the pieces to pass it, one would judge at first thought that there would be no room for a sufficient inflow tube by the side of it.

Careful mathematical calculations, verified by experiments, showed me three years ago that, by having a reservoir of warm carbolated water 42 inches above the pubis of the patient, and a peculiarly constructed double tube, the inflow channel can be reduced to a small size, and still supply a current forcible enough to sweep all fragments rapidly out of the bladder. The following cuts illustrate the apparatus:

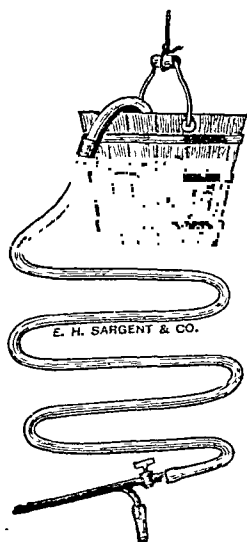


Figure 2.

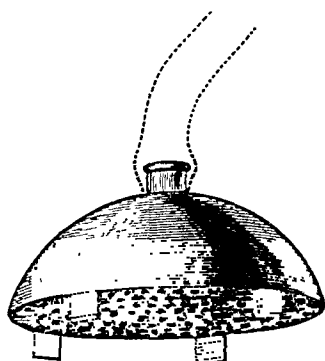


Figure 3.

Fig. 2 represents a bucket or other reservoir filled with warm carbolated water and suspended 42 inches above the patient's pubis, while a syphon of rubber tubing descends from the bucket to the inflow branch of the evacuating tube.

A strainer shaped as in Fig. 3 is attached to the upper end of the tube and dropped into the bucket. The evacuating tube is double, and the inflow part is smaller than the outflow, and lapped halfway around it as shown in enlarged cross sections in Fig. 4, where the cylindrical tube A B is the outflow channel and the lunate space B C is the inflow portion.

Fig. 5 gives a side view of the evacuator. Z is the inflow tube which attaches to the rubber syphon shown in Fig. 2. The inflow tube passes by the curved outflow tube J O without infringing on its calibre, and laps itself around the under half of the outflow tube as shown at B C, Fig. 4. Near the end X, it discharges into the bladder by about thirty small openings. This sends a copious current into the bladder, which rushes into the fenestrum X of the outflow tube X J O., and sweeps out the crushed fragments with great velocity.

It will be observed that the outflow pipe is prolonged a little by a piece of rubber tubing, J O, the use of which requires a word of explanation. Both in Bigelow's instrument and in my own, the fenestrum X is often blocked by several fragments rushing to the orifice at once and locking themselves together in a sort of arch, obstructing the outflow and causing a sudden diminution of the stream of water. When this occurs the surgeon closes the lower end of the short rubber tube J O

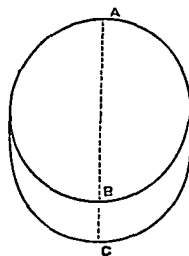


Figure 4.

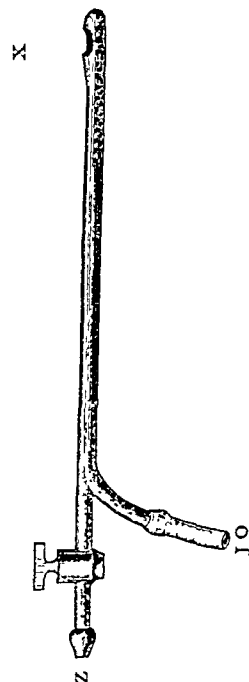


Figure 5.

by seizing it with the thumb and finger of one hand, and then with the corresponding digits of the other hand suddenly compresses the rubber

just above. This sends a quick, forcible jet back into the bladder, driving back the fragments lodged across the fenestrum X, and permitting the outward current to resume its course. I devised this apparatus three years ago, and have reason to be highly pleased with its use.

In respect to the new term, litholapaxy, some object that it designates only an improved form of lithotritry, and consequently that Bigelow is not really entitled to inflict it upon an art already overburdened with technicalities, and some European authors decline to use it. However, there are good reasons for adopting it. Lithotritry is a harsh, rough word, and has the inconvenience of sounding so much like lithotomy when carelessly spoken, that surgical teachers and pupils dislike it. Litholapaxy, on the contrary, is smooth and easily distinguished. Moreover, it etymologically means "stone evacuation," and hence is appropriate to include both cases of actual crushing, and also those frequent ones in which the great tubes of Bigelow evacuate stones of some little size without the necessity of crushing. The ability to do this is an important merit. It is probable, therefore, that the word litholapaxy will remain in use, and lithotritry disappear.

No. 6 Sixteenth St., Chicago.

FOUR CASES OF GUNSHOT WOUND OF THE ABDOMEN TREATED BY LAP-AROTOMY, WITH REMARKS.

Read before the Kentucky State Medical Society, May 9, 1889

BY DAVID BARROW, M.D.,
OF LEXINGTON, KY

Case 1.—On July 28th last, about midday, I was requested to see a man at St. Joseph's Hospital, who was reported to be shot in the abdomen. Finding him in the ward, we obtained the following history, principally given by others, though he himself was conscious and would answer questions.

M. K., white, aged 31 years, strong and muscular, had that morning, at Payne's Depot, a station eight miles from Lexington, been shot. He was brought to Lexington on the train, and from the depot to the hospital in a wagon. He had vomited frequently, and had suffered continuous and intense abdominal pain; so great at times that morphine was given hypodermically. Thirst was intense, and considerable water was drunk, with the effect, usually, of causing him to vomit, and so great was the collapse at times that during the rough journey stimulants were given.

He was shot with a 44 Colt's pistol at 10 A.M., and we saw him two and a half hours later. His condition at our visit was one of marked shock. He lay upon a bed breathing rapidly, and wet with perspiration. The movements of the upper

extremities were frequent and restless, and the thighs were flexed slightly upon the abdomen; the pulse was rapid, weak and irregular, expression anxious and skin cold; vomiting frequent, and he complained bitterly of pain in the abdomen. The wound was $\frac{1}{2}$ inch to the left of and $1\frac{1}{2}$ inch below the umbilicus; the ball had passed through the rectus muscle, and from the wound projected a portion of the omentum, somewhat soiled and injected, but not strangulated; the abdomen was hard and retracted, and dull over most of its anterior region, and from the wound came every few seconds blood and gas, the odor being fecal. By firm pressure a considerable quantity of blood could be forced out of the cavity. His condition, with this evidence and the location of the wound, made it certain that the alimentary canal was wounded, and possibly other important structures; also, an active hæmorrhage was going on. There was only the wound of entrance, and this gave no evidence of the course taken by the ball.

An operation was decided upon, and a physician who had, unfortunately, been a party to the shooting, and who was present, urged that it be done at once; so, the patient's consent being obtained, everything was made ready.

Antisepsis was attempted, using for instruments carbolic acid, and for all other purposes bichloride of mercury. He was put upon the table three and a half hours after being shot, and the anæsthesia begun. There were present Drs. Brock, Coleman, Molloy and Robinson, and they kindly assisted me in the operation. The integument, after being carefully washed with water and soap, was shaved and washed with ether, and wet bichloride towels were applied. The incision was in the median line, between the umbilicus and pubis, and about 4 inches long. Dissecting carefully until the peritoneum was reached, it was incised between forceps, and the cut enlarged with the finger as guide in the peritoneal cavity. Blood welled up, and considerable gas escaped. As hæmorrhage continued free, the intestines, after the incision was enlarged to about 7 inches, were rapidly delivered and surrounded with warm bichloride towels, and the bleeding vessels sought.

Two branches of the superior mesenteric artery were found bleeding—these were controlled by forceps and left to be tied later. The intestines were then carefully examined, and seven large, ragged perforations found. The mesentery was also wounded in five places and badly lacerated. The intestines were empty, and there was no fæcal extravasation.

The perforations being very ragged, were trimmed with the scissors and closed with the continuous Czerny-Lembert suture, using fine catgut for the purpose. After suturing the perforations, the mesenteric vessels were ligated and all raw surfaces of the mesentery approximated. The intes-

tines were then, after being cleansed, returned to the cavity.

During the entire suturing warm bichloride towels, 1 to 20,000, protected the intestines, and as little manipulation was done as possible under the circumstances. The cavity was thoroughly irrigated with several pitchersful of bichloride solution, and sponged clean and dry. The incision was closed with silk and no drainage tube put in; antiseptic dressings were applied and the patient put in a warm bed. The duration of the operation was two hours, and most of the time the pulse could not be counted. Stimulating hypodermics were given, and he was kept surrounded with hot bottles and given hot water enemata. He rallied after awhile and spoke with his sister, and the heart's action improved, but soon he became restless, and died three hours after being put to bed. During the anæsthesia both chloroform and ether were given.

Remarks.—In this patient collapse was the most prominent condition, partly due to the rough trip, but mainly to the loss of blood. The transfusion of a saline solution might have improved his condition. In operating the first thing to do was to check hæmorrhage, and with that in view, the intestines were rapidly delivered and the bleeding vessels caught; after which the injuries were repaired, this being a long and tedious process, as the perforations were large and ragged. In suturing, I commenced about $\frac{1}{4}$ inch from the margin of the wound, and after taking the first stitch, tied the thread, leaving the free end about 6 inches long; then continuing with the suture beyond the opposite margin of the wound, and returning with the Lembert suture to the point of starting, and there tying with the free end. In this way each perforation was rapidly and doubly sutured and the thread tied securely. A drainage tube should have been used, but having none at hand, and hurrying to get the patient off the table, I closed the incision, but with the intention of introducing one later, should there be any indication for so doing. The bullet passed from left to right, and downward and backward. The hæmorrhage, I feel sure, was the main cause of this patient dying so soon; the length of the operation with its consequent manipulation and exposure, and the long anæsthesia were, of course, additional factors in hastening death.

Case 2.—D. J., white, æt. 25, strong and muscular, was first seen in a saloon at 10 P.M., November 6, where he had been shot with a 38 calibre pistol about a half-hour before; he was drunk, and had been since early morning, and had eaten nothing. After being shot he was laid upon a box in the back part of the room, where he was when I went in. The wound was one inch below and three posterior to the left ant. sup. spine of the ilium, and just below the liver and under the skin, and three and a half inches

to the right of the median line the bullet could be distinctly felt.

He was shot while leaning upon the counter, and the ball had traversed the abdominal cavity from below, upward, and from the left to the right side. His pulse at this time was less than 100, strong and regular; no vomiting had occurred, nor was there much evidence of shock; he was restless and talkative, and complained of abdominal pain, and begged that I should give him relief. A third of a grain of morphine was injected, and his friends were instructed to carry him home, which was about a mile off, which they did, after placing him on a mattress in a wagon. I returned to the office for assistants and instruments. Drs. Coleman and Molloy accompanied me to his house and there we found him resting quietly and under the influence of the morphine, apparently no worse from the ride in the wagon.

The wound was again examined, and by enlarging it slightly I succeeded in following the track of the ball through the ilium and demonstrating that the abdominal cavity had been entered. After consultation, laparotomy was agreed upon, but owing to the unfavorable surroundings at his home it was thought best to have him taken to the hospital. He was therefore again put into the wagon and taken to the hospital, reaching there about 1 o'clock in the morning.

At this time there was more evidence of shock, the pulse was 120, and much weaker; he had vomited several times, and his expression had become anxious and his movements restless, and he complained more of abdominal pain.

Chloroform was administered, and at 2 o'clock, by gas and lamplight, I began the operation. Hands and instruments were scrubbed in carbolyzed water, and the patient's abdomen thoroughly cleansed and shaved. The incision extended from a little below the ensiform cartilage to near the umbilicus, and on incising the peritoneum considerable gas and blood escaped; the intestines presented at the opening and it required great care to prevent their being forced out upon the abdomen. The cavity contained about a quart of bloody fluid, but no fecal matter was seen. The small intestines were first examined, and nine perforations found; other viscera liable to injury were seen as best I could through the incision, but no wounds were found, save those of the small intestines and several of the mesentery. A branch of the superior mesenteric artery was found bleeding and it was tied with fine silk. Six of the perforations were sutured, as in the previous case, using very fine carbolyzed silk; the other three being close and destroying a large part of the bowel lumen were resected, about 4 inches of the gut being cut out, and with it a triangular piece of the mesentery. The resected ends were united with the Czerny-Lembert suture and the cut surfaces of the mesentery were carefully ad-

justed and sewed; two small vessels were divided and tied with fine silk. The intestines were protected during the operation with warm wet towels, and were manipulated as little as possible. The peritoneal cavity was then sponged out, and after considerable manipulation and many futile attempts at replacement the incision was enlarged to 7 inches, and then only after puncturing the canal and evacuating the gas, did I succeed in returning the intestines to the cavity, at least a half hour being spent in this effort.

In closing the incision several relaxing sutures were used before the edges could be coapted, and during the entire time great difficulty was experienced in retaining the intestines in the abdominal cavity. The wound through the ilium was left open. The bullet was removed through an incision over it. The operation lasted two hours, and towards the end the patient became collapsed, and stimulating hypodermics were freely given. Antiseptic dressings were applied and he rallied fairly well after being put to bed and surrounded with hot bottles. About an hour afterwards he became delirious and force was necessary in preventing his getting up; so violent was he that morphine was injected.

At my first visit, five hours after the operation, he was resting quietly, with favorable symptoms, later during the day he became restless, vomited a little, and complained of some abdominal pain. He died fifteen hours after the operation.

Remarks.—In this case there was much of interest: first, there was but little shock; second, the incision was above the umbilicus and bisected the track of the ball; third, there was extreme rigidity and retraction of the abdominal walls; fourth, resection of the gut was done; fifth, the intestines were with great difficulty returned to the abdominal cavity; sixth, the peritoneal toilette was imperfect; seventh, the incision was sutured with difficulty; eighth, there was violent delirium after being put to bed.

The absence of shock was prominent, and adds to the evidence that lack of this symptom should not have too much weight in estimating the injury done by a ball. The incision above the umbilicus, I believe, was unfortunate, for being near the muscular attachment the rigidity of the walls was great and the unyielding opening made it almost impossible to examine for or to repair the injuries. The incision had to be enlarged to 7 inches before the intestines could be returned, and even then they had to be punctured. Time could have been saved and manipulation lessened had the incision been, in the first place, below the umbilicus, and then, if necessary, extended up. Three of the perforations were so close that resection was deemed advisable; in a similar case I should suture the wounds, and if the calibre was too much diminished, should make an anastomosis above and below the constriction, using plates, as recommended by Dr. Senn.

The great difficulty experienced in keeping the intestines confined made it impossible to clean the peritoneal cavity. The delirium was due largely to whiskey; death to the extensive wounds, to the duration of the operation, and its necessary attendants, and probably occurred before there was septic peritonitis.

Case 3.—D. J., mulatto, æt. 29, was shot in the country on December 25th, at 10 o'clock in the morning. He was drunk at the time, and after receiving the wound walked several hundred yards. He came to Lexington in a wagon, and Dr. Willis was called to see him. I saw him at 2 P.M., and he was still quite drunk. There was no shock, and he complained little of pain. Two and a quarter inches to the left of, and a half-inch below the umbilicus was a bullet wound, and through it a probe passed into the abdominal cavity. An exploratory incision was decided upon, and everything gotten ready as quickly as possible. Assisted by Drs. Willis, Molloy, and Brock, I began to operate at 4 o'clock, six hours after he received the wound. Chloroform was administered, and an incision was made in the median line, between the umbilicus and pubis, about 4 inches long. A loop of the small intestines was brought into the opening, and starting from this point I traced the tube above to the duodenum and below to the cæcum, but found no injury. There being a little blood in the peritoneal cavity, it was sponged out and the incision sutured with silk. Boiled water filtered through flannel was the only kind used. The operation lasted about an hour, and the patient rallied promptly. Antiseptic dressings were applied and he was put to bed. During the night he became quite restless, vomited several times, and the temperature went up to 100. A $\frac{1}{2}$ grain of morphine was given by mouth, and he became quiet.

December 26th, 11 A.M.—Patient doing well; no pain; normal pulse and temperature. From this time everything was favorable; the stitches were removed on the ninth day; twenty days after the operation he returned to the country, against my advice, but when last heard from was well and doing hard work. After the first twenty-four hours small quantities of milk were given, and at the end of two days the food was gradually increased to its normal quantity. Castor oil was given on the fourth day and the bowels moved several times.

Remarks.—The location of the wound and the fact that the abdominal cavity had been entered, were my only reasons for opening the abdomen; then, an exploration, cleanly and carefully done, did not, in my opinion, add much gravity to the case. Senn's hydrogen-gas test for perforation might have been preferable to exploration, but I was not prepared to make it.

Case 4.—J. J., Negro, æt. 25, shot at 10 P.M. April 22; seen by me at 2 A.M. the 23d. Was

then resting quietly and with but little shock; no vomiting had occurred, and there was nothing to indicate serious injury. One and a half inches below the ensiform cartilage, and one and a half to the right of the median line, there was a bullet wound, which passed direct into the abdominal cavity. I left, with the instruction to have things ready for an operation at nine o'clock.

At 11 A.M., thirteen hours after the wound was received, I made an exploratory incision four inches long in the median line, from the ensiform cartilage down. On opening the cavity considerable blood and bile escaped; and introducing my finger I felt a wound in the liver. The ball had passed through the right lobe, a little to the right of the suspensory ligament, and had cut one of the bile ducts; the gall-bladder was intact, but empty. Hæmorrhage continuing, I decided to plug the wound with bichloride gauze, but to do this I was forced to make a cross incision of two inches, which divided the right rectus muscle below the cartilage. I succeeded in stuffing gauze in the anterior part of the wound and in controlling the hæmorrhage; the end of the gauze was brought out at the upper part of the incision. The posterior part of the wound was hard to get at, and as but little blood came from it, I left it without interference.

The peritoneal cavity was irrigated with two gallons of warm water and sponged out fairly clean. The incision was closed with silk and a rubber drainage-tube put in; iodoform was sprinkled over the wound and bichloride dressings were applied. Chloroform was the anæsthetic; operation lasted one hour, and the patient rallied well. He did well for two days after the operation; jaundice was then marked, and he became restless and delirious. He continued in this condition until the 28th, nearly five days after the operation, when he died. Bowels were moved frequently with glycerine enemata; urine contained a great deal of bile.

Remarks.—Considering the quantity of bile in the peritoneal cavity, the shock was very slight. All agree that bile extravasation renders a case almost hopeless; several notable exceptions are, however, referred to in "Greig Smith's Abdominal Surgery." In one, forty-seven pints of what seemed to be bile were drawn from the peritoneal cavity by Thiersch. The hæmorrhage from the liver was successfully controlled by stuffing the wound with bichloride gauze. There was never the slightest abdominal tenderness or distension, and the temperature never exceeded 99. The patient suffered more with pain in the right shoulder than he did from the wound.

In my opinion this patient would have recovered had not the bile duct been cut, and I feel sure that his death was due to cholæmia.

GENERAL REMARKS.

Dr. Coley, in the *Boston Medical and Surgical*

Journal, gives to Baudens, of France, the credit of having done the first laparotomy for penetrating shot wounds of the abdomen, in 1836. He says: "Baudens boldly opened the abdominal cavity, resected eight inches of the small intestines, and united the edges with the Lembert suture. Although the patient died on the third day, the autopsy revealed a wound of the cæcum which had not been discovered at the time of the operation, and fæcal extravasation in the abdominal cavity. His second case proved to be a wound of the transverse colon. The abdominal wound was enlarged, intestine sutured, and the patient recovered."

Dr. Kinlock, of Charleston, S. C., did this operation in 1881; and Kocher, of Berne, Switzerland, had a successful case in 1883. In this country Dr. Bull, of New York, met with the first success in 1884. Since then many operators have entered the field, and in Dr. Coley's article he gives tables containing 74 cases, with 39.5 per cent. recoveries. Under the "let alone" management of such cases, the recoveries were less than 10 per cent. He also points out the importance of operating early; in those cases operated upon within twelve hours after the wound had been received, the per cent. of recoveries was much greater than in those operated upon later.

With such a difference in the mortality, there can no longer be doubt as to the propriety of opening the abdomen when penetration has occurred, and surgeons are almost unanimous in advising laparotomy when there is strong evidence of the viscera being wounded. I might go farther and say, the fact that a ball had penetrated the abdominal cavity in a location where visceral injury is probable, should justify the surgeon in making an exploratory incision, even when the symptoms indicate no serious damage. Dr. Jos. M. Fox reports a successful case where two perforations were found in the small and two in the large bowel, and the only indication for operation was "the fact that the ball was found to have entered the abdominal cavity."

There was but little shock in my second case when I was first called to him, and in the third none at all. In the second I found great traumatism; in the third, no injury had been done the viscera, but my exploration did no harm, and the patient made a rapid recovery. Others have opened the abdomen and have found no viscera wounded, but all of the cases, I believe, have recovered after the exploratory operation. In one case mentioned by Dr. Mears, in his article in the *Annual of the Universal Medical Sciences*, the counsel, to defend his client, plead on the ground that the attending physician had failed in his duty, by not opening the abdomen and repairing the wounded viscera.

We now have a reliable test for perforation of the alimentary canal by the use of hydrogen gas,

as recommended by Senn. Several cases have been reported where perforation has been demonstrated, and Dr. Senn reports a very interesting one in which, after closing eleven perforations, he was enabled to find the twelfth in the upper part of the rectum, by the gas continuing to escape when forced into the bowel. This patient recovered.

When first called to a case of gun-shot wound of the abdomen, the thing to ascertain is: whether the peritoneal cavity has been entered; and, to do this, it may be necessary to enlarge the bullet wound and follow it through the walls. I have met two cases recently, of abdominal wounds, where the cavity had not been entered, although the wound in each case was near the umbilicus, and in one there was considerable shock. In following the track of the bullet, important evidence may be gained by noting the direction taken, and this will aid us in estimating the damage done in the cavity if it has been entered. In doing laparotomy for penetrating wounds of the abdomen, we should be fully equipped, that every advantage for recovery may be given that the surgeon can possibly offer. Cleanliness here, as in all abdominal operations, is essential, and any neglect in cleansing ourselves, instruments or patients, is scarcely short of criminal.

Water, boiled and strained, will answer for the peritoneal cavity, and I prefer not to add an antiseptic; a 5 per cent. solution of carbolic acid is best to cleanse the hands and instruments. Operators are almost unanimous in advising the median incision in this operation, and there can be no doubt but in the large number of cases this incision will best serve the surgeon. Dr. McGraw, of Detroit, in an interesting article published in the *Medical Record*, on "Some Points on Laparotomy for Visceral Injuries," disapproves of the incision being so invariably made in the median line. He discusses this fully, and cites a case where the ascending colon was perforated, and he succeeded in easily suturing the perforation by enlarging the bullet wound over the colon; had he made the median incision this would have been impossible, without making the incision very long. Unless there is strong evidence, however that the ball has injured structures only far to one side, or that one of the immovable organs has been wounded in a part far from the median line, I should employ the short median incision; even a long median, if the viscera could be repaired through it, I should prefer to one considerably shorter to one side. An incision through muscles causes them to contract, the abdominal walls to become rigid, and manipulation difficult; and besides, through a small incision to one side it is almost impossible to make a clean peritoneal toilette.

In my second case the operation was prolonged and great difficulty encountered in returning the

intestines to the cavity, owing to the rigidity and retraction of the abdominal walls. I attribute this condition to having made the incision high up, consequently near the muscular attachments; and to the fact that the ball had plowed through the abdominal muscles to the right of the median line, and had caused them to contract tonically. If possible we should, as soon as the peritoneal cavity is entered, find the course taken by the ball, and by carefully examining the wound—I refer, of course, to those cases where there is but one—and noting it carefully, first at the point it enters the wall and then at the point it leaves it to enter the cavity, we will usually be enabled to form a good idea of the course that has been taken. Muscular contraction and change in the patient's position may cause a change in the relative position of the two openings; but frequently the information gained will be satisfactory. If the direction is ascertained, then only those viscera possible to be injured should be examined, and no others manipulated.

Should we be in doubt as to the course of the ball, it may be necessary to examine most of the viscera, and to do this a long incision will be necessary. To deliver the intestines, and keep them out any length of time, even when surrounded by warm towels, will cause marked shock, and if possible, only the loop being sutured should be out of the cavity, and it should be returned before another is delivered. Care in preventing intestinal exposure, and in manipulating but little, is very important. Dr. Senn observed that dogs would frequently die from shock after the intestines were exposed for a half hour, and I see no reason why it should be different with man. In most cases the jejunum and ilium must be examined, and it is best to catch up a presenting loop, and to trace the tube first in one direction and then in the other, using care to return the examined loop as the next is brought in view. An assistant can usually with sponges keep the opening closed and the intestines in the cavity, except the part being operated upon. In case of hæmorrhage the intestines must be delivered rapidly and the bleeding vessels controlled, as in my first case, and sometimes, owing to the rigidity of the walls, the intestines will be forced out of the cavity, as happened in my second case.

All other viscera in the bullet's course should next be examined, by sight if possible, if not by sight, by touch; and if injury be found, it may be necessary to enlarge the incision before suturing can be done. The Czerny-Lembert suture will close securely all perforations of the hollow viscera, and I prefer the continuous suture, as it can be applied more rapidly. Dr. Senn recommends that "omental flaps" be applied over the sutures after circular enterorrhaphy, among other reasons, it being an additional safeguard against extravasation. All wounds of the mesentery

should be carefully coapted and sutured. In those cases where the mesentery is extensively lacerated at its junction with the intestines, and the blood supply cut off, resection should be done. In resecting, we can use the Czerny-Lembert suture, or better than that, Jobert's invagination suture as modified by Dr. Senn. In wounds of the solid viscera, when the hæmorrhage can be stayed, the prognosis is more favorable. In liver wounds, uncomplicated by other visceral injuries, the majority of cases have recovered. To stop hæmorrhage, deep sutures should be used if possible; if this cannot be done, then the cautery should be applied or the perforation stuffed with iodoform gauze, as has been successfully done in a liver wound. If hæmorrhage continues from a wound of either the spleen or kidney, it may be necessary to remove the organ. Dr. Parkes lost a case from hæmorrhage from the kidney, his patient living twenty-four hours; and Dr. Keen removed a kidney successfully, his patient living fifteen days, death being then caused by gangrene of a contused wound of the mesentery setting up septic peritonitis. Should the gall-bladder be wounded and the bile extravasated, the prognosis is most grave, death being almost inevitable. Greig Smith, in his "Abdominal Surgery," mentions a case recorded by Paroisse, where a ball remained in the gall-bladder for two years before death. We may, in perforations of this viscus, either suture the perforation or do a cholecystectomy.

Wounds of the urinary bladder should be sutured, and if the peritoneal cavity is not infected by urine, the patient may recover.

Besides the cases above mentioned, I know of but one other laparotomy for gunshot wound of the abdomen in Kentucky, and that was a case reported by Dr. Isaac Warren, of Somerset. He operated twenty-four hours after the patient was shot. The small intestines were perforated five times; the patient died of peritonitis fourteen hours after the operation.

REPORTS FROM HOSPITALS.

SURGICAL CLINICS AT THE WESTERN PENNSYLVANIA HOSPITAL BEFORE THE STUDENTS OF THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

BY PROFESSOR J. B. MURDOCH,

SURGEON TO THE WESTERN PENNSYLVANIA HOSPITAL AND PROFESSOR OF CLINICAL SURGERY IN THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

[Reported by WILL. N. PRINGLE, M.D., a member of the Graduating Class.]

January 12, 1889.

AMPUTATION OF THE FORE-ARM.

We have a patient here this morning who has

had his hand traversed by a car-wheel. This happened about two hours ago, and illustrates, very forcibly, the condition in which you will find a limb after an accident of this kind. You will frequently hear people say when they see a contused limb that, "it was merely grazed by the flange." Now this is an impossibility. I think that all of you know that the flange of a wheel is on the inner surface of the wheel, and travels along the inner edge of the rail, so that in order to be "grazed by the flange" the limb must be traversed by the tread of the wheel, or his body must be entirely under the car. A limb may also be caught and pushed along in front of the wheel, for a short distance, and then thrown from the rail. This may cause a very extensive contusion, so that you may even be at a loss to know, whether, or not, the wheel passed over the limb. This you may always ascertain by examining the bone, which you will find crushed, and finally comminuted where traversed, by the wheel, but where the limb has been merely shoved in front of the wheel, and thrown from the rail, you may find the bone fractured, in several places perhaps, but you will not find it crushed into fine fragments.

Before the days of antiseptics, we used strips of adhesive plasters in dressing these wounds, we formed our flaps, placed a few sutures, then covered the stump with adhesive strips. We do not use the plasters now, but we sew up our wound a little more carefully. One reason why we do not use plasters is because they make a filthy dressing, and another is, because of the septic material in the plaster. In those days we shaved the limb, carefully to facilitate the removal of the plasters, we still continue to shave the limb, not so carefully, however, and principally for the sake of cleanliness.

In amputations of the forearm, I prefer the modified flap operation. You grasp the limb between the thumb and forefinger, of your left hand, at the point where you intend to saw the bone off. You then make your flaps by making incisions between the points where your thumb and forefinger rest, on the limb. You then dissect up the skin, turning it up as you would the sleeve of your coat. I also like to include part of the muscle, because if you dissect the skin up by itself, you sever all of the little vessels that go to its nourishment. I prefer the modified circular operation, because you cut the arteries at a right angle, and you make a less wound in the skin. After you have turned the skin up sufficiently, you make a circular incision of the muscles, cutting everything down to the bone, then pass the knife between the bones, cutting the interosseous membrane. You then saw off the bones, and there is a right and a wrong way to do this. I begin by placing the heel of the saw on the radius, then draw it back, making a track for your saw.

After your saw is well started in the radius, depress the handle and make a start in the ulna, then return and sever the radius, and last of all the ulna. Do not saw rapidly as the ends of the bones may be burned by the friction of the saw. Bite off all sharp angles or points of bone, with the bone forceps. In controlling hæmorrhage, I twist large arteries, and for capillary oozing, hot water is generally sufficient. A drainage tube is then inserted, and the wound is closed. In wounds like this, I like the seamstress' stitch; do not make the mistake of using the glover's stitch, or the stitch used in sewing covers on balls, for seamstress' stitch; if you do, you will not bring your edges into close apposition. Do not sew up a wound too tightly. Always make allowance for more or less effusion and wound tension.

OPERATION FOR FISTULA IN ANO.

We have another case to show you, that of a man with a fistula in ano. These, as you know, are caused by traumatisms, foreign substances in the rectum, and various other ways. An abscess first forms in the vicinity of the anus, pus accumulates and travels in the direction of the least resistance, which is usually in the direction of the rectum, although they also frequently open externally. After they have once opened into the rectum, the irritation from fæces entering the canal, together with the movements of the bowel, and the contractions and relaxations of the sphincter ani, interfere continually with repair, and they do not heal until the sphincter ani is divided.

You notice about this anus a peculiar growth, resembling somewhat a rose in appearance, then a condylomata, or mass of syphylitic warts. These must be handled with great care, as they possess the power of innoculating syphilis through a wound in the skin, or through an abrasion on the hands of the operator. You also see an opening in the skin on the left of the median line, and two inches from the anus. This is the external opening of the fistula, a grooved director passes in at this opening, and readily passes through and out at the anus. The director now lies in the track of the fistula, and with a scalpel I will incise all of the tissue that is lying over the director. This constitutes the operation for fistula in ano.

I find another small opening in the skin, on the right hand side of the median line, and about two inches from the anus. In this case I am unable to find an internal opening, but as the part is all undermined here with pus, I will make an internal opening, by forcing the director through into the rectum. This side will be incised as was the other. The after-treatment of these wounds, will be of more importance, than the operation. They must be kept thoroughly cleansed by frequent washings with antiseptic fluids, and they must be kept packed with iodoform gauze,

in order that repair may take place from the bottom. These condylomata will be removed by the scissors, and their seat cauterized, and when they begin to granulate they will be occasionally touched with nitric acid, nitrate of silver, or other caustics. This man will be put upon proto-iodide of mercury, which will be pushed until his gums are slightly touched, and if he does not improve on this he will be given mixed treatment. A favorite plan of mine is to take a piece of blue ointment the size of a chestnut, and rub it into his back, and repeat this each evening. This, together with the exhibition of iodide of potassium internally, I consider an excellent mode of treatment.

January 19, 1889.

OPERATION FOR HARELIP.

I have to-day a case of harelip to show you. The patient is a boy about 6 years old, and is brought here for operation by his father. Besides the harelip, he has a cleft of the palate. Instead of the double fissure in the lip as is often the case, he has but a single fissure, and where this is the case, it is almost always on the left side. You have seen Professor King operate on several cases of harelip during this term, but my manner of operating is somewhat different from that of Professor King. As a preliminary step I pass a loop of string, or ligature, through the lower angles of the lip, on either side of the cleft, not for any part it takes in the operation, but for the purpose of holding the parts out of the way. This is better accomplished in this way, than it could possibly be by the aid of forceps. I then dissect the lip loose from the superior maxillary bone, on either side of the fissure, so that they may be drawn together with greater facility, in closing the fissure. The next step in the operation, is to pare or denude the edges, that are to be brought into apposition. This is done by transfixing the lip just at its vermilion border, or just where the skin and mucous membrane meet. This should be done with a narrow, straight bistoury. The incision should then be carried well up to the nostril or to the extreme limit of the fissure, then cut off. The other side of the fissure, is then to be treated in like manner, and the two thin strips that have been pared off brought down so that they hang in front of the mouth. This constitutes the third step in the operation, and the loops through the angles of the lip, having subserved their purpose, are now removed. The lips having been previously dissected loose from the superior maxillary bone, are readily brought together, closing the wound. Here also surgeons differ, in the manner of retaining the parts, some prefer the wire suture, passed through the lips, while others prefer the silk or horse-hair ligature. For my part I prefer the harelip pins and a cotton cord ligature. I

prefer the cotton ligature, because it is a little more elastic, and a little softer, and not so likely to cut into the tissues. The first pin is passed just at the vermilion border of the lip, it should go deeply into the tissues of the lip, but should not include the mucous membrane of the mouth. It should pass across the wound, and emerge from the skin, at a point corresponding exactly with the point of entrance on the opposite side. The other pin is passed in like manner, near the upper border of the wound. It is not necessary to wait, for the hæmorrhage to cease entirely. Bringing the parts together with the pins, is usually sufficient to stop the hæmorrhage, if any remain.

You now notice a projection downward in the line of the wound. This is caused by union of the two strips pared from the sides of the fissure, and they will be made to fulfil a good purpose here, because in a great many of these operations a notch is left after the wound heals. In this case, part of this projection will be left here, so that after repair has taken place, enough of it will remain, to prevent a notch being formed. Now in addition to the two pins, I will put a wire suture through the wound, for additional support, and two or three sutures of fine silk, through the mucous membrane of the projecting part, to hold it in apposition. The pins should not be allowed to remain too long, or they will leave marks, after the wound has healed; on the other hand, if they are removed too soon the wound may come apart, so it is a very nice point to know just when to remove them. Mr. Holmes asserts that he removes the pins in twenty-four hours, while others allow them to remain for several days. There is no rule in regard to this, but they should be removed as soon as they can be dispensed with. I cut off the heads, and points, of the pins, and to prevent the projecting parts from sinking into the skin, I put small bits of plaster under them. For additional support, I draw narrow strips of adhesive plaster over the wound, from side to side.

THE OPERATION OF CIRCUMCISION.

I have another case to show you to-day, that of circumcision. It is said that this operation was first done by Moses, but I believe that it was done in Arabia, long before the time of Moses. At all events you know that there are fashions in surgical operations, as well as in the cut of your wearing apparel. This operation seems to have again come in fashion, within late years. A long præpuce of course is an annoyance, to a man all through life. Besides that from phimosis, and paraphimosis, it is exceedingly filthy, and frequently leads to disease. There is, however, some points in favor of the long præpuce. It was put there for some good. Without it the meatus may become contracted from friction with the

clothing. In covering the glans it serves to keep that part more tender, and sensitive, thus rendering copulation more desirable, and conception more certain. Therefore I think that the operation should not be advised unless there be some good reason for it, other than that of being in the fashion.

This boy, about 15 years old, has been in the medical side of the hospital for some time. A few weeks ago, it was noticed that he became nervous, restless and sleepless. Later he became delirious, which continued until he had to be confined to the cell. An examination showed that he had a very long præpuce, and phimosis. I do not know that this is the cause of his nervous trouble, but our reason for doing the operation is based on sufficient absolute authority, to justify us in doing it. Do not think, however, that every boy with a long præpuce has phimosis, or even an abnormality. This is the normal condition in young boys. In doing this operation, it is well to make a mark with ink at the point where you intend to divide the foreskin. The part is then placed between the blades of Ricord's forceps, and all in front of the forceps is cut off. The skin is then reflected behind the glands, but the mucous membrane will remain. This is then cut or torn, and reflected back with the skin. The skin and mucous membrane is then sutured together, and this is usually done with the horse-hair suture. In the Jewish rite, the Rabbi does not sew the skin and mucous membrane together, and I would not advise you to do it, in very young children. This constitutes the operation. This boy will be given medical treatment, and it remains to be seen what effect it will have on his reason which, as I told you, is entirely lost.

MEDICAL PROGRESS.

ON THE PROGNOSIS OF HEART DISEASE.—LEYDEN reverts once more to the question how long the period of complete compensation of a cardiac lesion can last. Supposing, for instance, that in a patient with cardiac lesion the compensation is altered. This alteration admits of three phases:

1. It is slight and manifests itself only by inability to work.
2. The trouble of compensation is complicated by dropsy.
3. Dropsy is accompanied by visceral congestions, asystole, etc.

This latter phase is beyond the physician's skill; only the first and second are susceptible to therapeutic measures.

The first question to be asked is regarding the cause of the break in the compensation; whether it is the result of a progress of the cardiac lesion

or of an accidental cause: fatigue, excess, over-feeding, additional disease, gravidity, etc. A conclusion of the utmost importance for prognosis may be drawn from the effect of the cardiac medicines, from which we may easily judge of the condition of the cardiac muscle. Oertel notes in his cardiac patients the daily quantity of liquids introduced and excreted, as in these cases the prognosis depends largely upon the difference between the introduction and excretion of liquids; the greater this difference the less favorable is the prognosis. The same inference may be drawn from the action of digitalis: the prognosis varies according to whether this substance acts rapidly or slowly, or not at all.

As regards physical symptoms of heart disease I have already stated that changes in the volume of the heart must especially be noted. While the heart tones have no especial prognostic value it may be said, in a general way, that the systolic murmur is less grave than the diastolic. It is certain that in many cases systolic murmurs may exist without a trace of cardiac lesion. To be sure, it is necessary to distinguish here between the systolic murmurs of the orifice of the aorta and those of the apex of the heart, as in individuals of a certain age the systolic murmurs of the aorta lead always to a suspicion of an alteration of the aorta. The prognosis of the systolic murmurs of the apex is, therefore, better. On the other hand, the diastolic murmurs indicate, except in very rare cases, the existence of an organic lesion. To be sure, there are accidental diastolic murmurs, but they are so rare as to be safely ignored for our present purpose.

Let us examine now the anomalies in the rhythm of the heart without organic lesion. The intermittence of the pulse with increase in strength at the moment of resumption induces individuals thus affected to believe that they have heart disease. I do not attribute the least significance to this symptom, which is due, I believe, to a psychical cause or to reflexes originating with the organs of the abdomen. Equally frequent is the arrhythmic pulse. There are persons who have had an arrhythmic pulse all their lives without being troubled thereby in the least (provided there is no manifest organic lesion of the heart). I consider the prognosis in such a case favorable, but the complete disappearance of this arrhythmia is very rare.

Delirium of the heart (or, as ancient authors call it, *tremor cordis*, because the rhythm could not be perceived), is a more serious affection. It cannot last very long without affecting the heart seriously.

Tachycardia, that is, a perceptible increase in the frequency of the pulse, depends physiologically upon a paresis or a paralysis of the vagus nerve. It is admitted that prolonged increase above 120 pulsations is dangerous, but 130 to 140

pulsations have been observed without death following. I observed once a pulse of 140 for four weeks, at the end of which period the patient died. In individuals affected with Basedow's disease the frequency of the pulse is always very great; above 160 it becomes dangerous to life. Once I saw a pulse of 200 in a patient affected with Basedow's disease, who died a few days afterward. In tachycardia febrilis the prognosis becomes serious as soon as there are more than 120 pulsations a minute. This kind of tachycardia may vary a great deal with different individuals and according to the disease. It is hardly necessary to mention the great frequency of pulse during the first period of acute exanthemata without the prognosis being unfavorable on account of it. There exists also a paroxysmal tachycardia in this sense, that the rapid pulse appears only at intervals; it is frequent in neuroses of the heart, and not dangerous because transitory. Tachycardia in convalescents appears in consequence of the slightest psychical or physical effort.

Bradycardia is seen in patients with icterus, and is generally rather a serious symptom. The bradycardia following the administering of digitalis, as also that which complicates angina pectoris, are well known. Physiologically, I mention here that ligature of the coronal arteries produces likewise a bradycardia. When patients are required to take digitalis for a long time the frequency of the pulse diminishes. Permanent bradycardia; that is, the rapid slackening of the pulse which falls to 30 or even 20 pulsations, was first described by Stokes; it is complicated with syncope, convulsions which seem to result from anæmia of the brain.—*La Semaine Médicale*, May 15, 1889.

L'HYDROXYLAMIN IN DERMATOLOGY.—P. J. EICHHOFF, in *Les Nouveaux Remèdes*, recommends this substance for the treatment of skin diseases. It appears in the form of colorless hygroscopic crystals, easily soluble in water, alcohol and glycerine. It is an active reducing agent, forming in the blood methæmoglobin. It produces hæmaturia by destroying the blood corpuscles when introduced into the blood in doses exceeding 1 centig. for each kilogr. of animal. Besides it acts as a narcotic on the nerve centres. Because of its pronounced reducing qualities this substance recommends itself as an excellent topical application in parasitical skin diseases. Eichhoff especially likes the chlorhydrate in the following formula:

Chlorhydrate of hydroxylamin . . . 0.1 gr.
Alcohol or glycerine 50.0 gr.
For external use.

After washing the affected portions of the skin with soap they are painted from three to five times daily with the alcoholic solution of hydroxylamin. This alcoholic solution being very irritating and poisonous, at the beginning no

stronger solution than 1:1,000 should be used, and not until later, when no harmful secondary symptoms have developed, may a stronger solution be resorted to. Eichhoff treated in this way five cases of lupus vulgare, five cases of herpes tonsurans, and one case of parasitical sycosis of the face. The results were especially encouraging in lupus; even after eight days of treatment a reduction of the hypertrophied portions was noticed, and a cure with smooth scar was effected inside of four weeks. In herpes tonsurans the hydroxylamin at first greatly irritates the skin, but the final result is none the less satisfactory. The author intends to use the substance also in other diseases, such as psoriasis.—*Journal de Médecine de Paris*, May 12, 1889.

PUERPERAL FEVER.—DR. A. HACHSTEIN, in *American Lancet*, says: The whole substance of the prevention of puerperal septicæmia is: Do not allow any poison to be near a puerpera, or if there is any do not permit it to enter her genital tract. But if regardless of all our precautions the poison has entered the genital tract, destroy it before it gets into the system.

This latter is the whole essence of therapy in this disease. Thus the most efficacious treatment will be a local one. Disinfecting vaginal injections will remove the poison from the wounded structures in the genital canal, and at the same time ward off the immigration of new poisonous matter. If pieces of membrane or of the placenta are left in the uterine cavity to decay, intra-uterine irrigation used two or three times will do the best service; if not sufficient, curetting should be resorted to. If the poison has entered the system, and we have to deal with general peritonitis, laparotomy should be taken into consideration.

In general treatment we all have been accustomed to rely greatly on opium. As for my part, if I had to treat a case of puerperal septicæmia now, I would not seal up the primæ viæ and so allow the ptomaines to remain in the system, by giving the opiates; but I use the salines from the beginning.—*Archives of Gynecology*, May, 1889.

THE DISAPPEARANCE OF CARDIAC MURMURS.—DR. M. A. BOYD, of Dublin, at a recent meeting of the Royal Academy of Medicine in Ireland, read a paper on the disappearance of cardiac murmurs which have existed sufficiently long and have led to such changes in the cardiac walls as to be considered organic in character. Such disappearing murmurs are generally consecutive to acute rheumatic endocarditis; cases also occur of chronic endocardial changes which ultimately leave the heart free from all traces of disease. Dr. Boyd gave three instances of cases under his own observation—one of the murmur of mitral regurgitation, with consecutive changes in the

left ventricle and auricle, which existed for two years, and ultimately disappeared, as did the hypertrophy associated with it; and two others of aortic regurgitation existing for a considerable period, which finally got quite well also. In both these latter cases the existence of hypertrophy and dilatation of the ventricle might be taken as sufficient evidence that they were of a permanent nature, as also the length of time they continued after the primary endocarditis. A well-established constrictive murmur, in his opinion, never gets well; it may disappear or cease to be heard, owing to failure or weakness of the cardiac walls, or to excessive dilatation either of these or the aorta, but the symptoms associated with it remain, and *post-mortem* evidence shows no cure. Plastic material deposited on or in valves may ultimately get absorbed when it only interferes with their adaptation, but when deposited around the margin of an orifice it must ultimately, by its contraction, cause obstruction. Such absorption is most likely to take place in young subjects, owing to the rapid metabolic changes which occur in their tissues and to compensation being more easily established; and is more frequent where the valvulitis is rheumatic than where it is the result of alcoholism, gout, or contracted kidney.—*The Medical Press*, March 13, 1889.

PRECOCIOUS MENSTRUATION: AMENORRHOEA WITH CONVULSIONS.—A case of remarkable precocious menstruation is reported by DR. DIAMANT, of Vienna. When a 12-month old, the child had cut all her milk teeth. When barely 2 years of age, the first period was observed. It lasted four days, and recurred with regularity till the child was 6 years old. At that age her breasts, loins, and pelvis were of the adult type; the axillæ and pubes were thickly covered with hair. Suddenly the period ceased, and for six months after the child had completed her sixth year epileptiform convulsions came on during sleep, at every date when the catamenia should have appeared. The fits some times lasted three-quarters of an hour, and increased in number every month. They were continuing when the case was reported, the child being then 6½ years old.—*British Medical Journal*, May 4, 1889.

PHENACETIN IN LOCOMOTOR ATAXIA.—HOTTENSTEIN, records the case of a man, æt. 64, who had a syphilitic history with typical progressive locomotor ataxia, accompanied by exceedingly severe lancinating pains in the legs, arms, and face, as well as the abdomen. In some attacks the bladder and genito-urinary tract were especially involved in the nerve-storm, and violent tenesmus was often present. Phenacetin, in the dose of 28 to 32 grains at the beginning of an attack, always brought relief in less than one hour.—*University Medical Magazine*, Jan., 1889.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00

SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JUNE 15, 1889.

RAILROAD RATES.

We regret to say that the Committee of Arrangements has been unable to secure special rates for those who wish to attend the meeting at Newport. Every reasonable effort has been made to secure reduced rates, and we feel confident that the action of the railroads has not been in accord with their own financial interests. On all these roads excursion rates are given, and doubtless in many cases these may be made available.

MASSAGE IN GYNECOLOGICAL PRACTICE.

A great deal of interest is being manifested of late in the treatment of uterine displacements and inflammatory exudates surrounding the female pelvic organs, by means of what may be called (for want of a better term) pelvic massage.

The principles involved in this method of treatment and their actual application in gynecological practice, while scarcely to be regarded as new have nevertheless only just begun to attract anything like general interest on the part of the profession. For some years past articles descriptive of the application of the methods, with accounts more or less credible of the cures achieved, have appeared in the literature of gynecology and in the near future the subject will doubtless have a literature of its own.

One of the earlier papers on this subject and one that has attracted considerable attention both at home and abroad, is that by Prof. A. Reeves

Jackson, of Chicago, entitled "Uterine Massage as a Means of Treating certain Forms of Enlargement of the Womb." This paper was read before the American Gynecological Society, in 1881. Very recently Prof. Jackson has expressed himself as thoroughly convinced of the efficacy of the method when properly employed. He believes, however, that it requires the manipulations of the skillful gynecologist himself, to secure anything like satisfactory results and that it is quite useless to relegate the patient to the hands of even the most skillful and painstaking nurse.

At a recent meeting of the Chicago Gynecological Society, Prof. F. H. Martin spoke of the method in warm terms of praise.

At the meeting of the Royal Academy of Medicine in Ireland, April 12, 1889, Dr. Alfred Smith reported the results attained by massage and pelvic gymnastics in six cases of prolapsus uteri. Although his results were not positively brilliant they were, notwithstanding, sufficiently satisfactory to encourage the reporter in the belief that the procedures in question possess a very high degree of efficiency. In the ensuing discussion all who participated, among them Dr. Atthill, expressed themselves as satisfied of the potentialities for good of these plans of treatment, which they welcome as important additions to the therapeutics of conservative gynecology.

In a recent discussion at a Congress of Russian physicians, a large number of cases of prolapse and displacements of the uterus treated in this manner were reported and much enthusiasm was manifested with regard to the results attained.

But it is not necessary to multiply reports of this character. Enough has already been said to indicate the widespread interest manifested. The universal expression of opinion is one indicative of great satisfaction that such a powerful adjuvant to the more familiar practices of conservative gynecology has been discovered.

But singularly enough, and little to the credit of professional gynecologists, this wave of enthusiasm was started by an outsider, so to say, for all unite in yielding the palm to Thure Brandt, of the "Central Institut" for gymnastics in Stockholm, who is not a physician at all, much less a gynecologist!

A very complete and extremely interesting description of Brandt's "hygienic-gymnastic treatment," as it is termed by the Germans, is con-

tained in a very recent publication by Dr. L. Fellner, of Vienna, in the *Klinische Zeit-und Streitfragen*. Dr. F., after having been for two months under the instruction of Brandt, returned to his home full of that kind of enthusiasm which is always infectious, though often somewhat disappointing in the end.

Brandt himself, it seems, had been actively engaged in massage from the year 1844, when in 1847 he was fortunate enough to cure a case of prolapse of the rectum. Later on, in 1861, he made a remarkable cure of a case of prolapsus uteri of twenty-seven years' standing, after a two weeks' course of treatment. This woman, he says, remained free from prolapse until her death which occurred twenty-three years later. Since then his experience with the various forms of uterine displacement and exudates, has been very extensive although for many years his results attracted comparatively little attention from medical men.

However, in 1887, his work having come to the notice of several physicians of eminence, he was introduced through the instrumentality of Profanter, to Prof. Schultze, of Jena, at whose clinic he was accorded full opportunity to display his remarkable abilities both in the direction of gynecological diagnosis and mechanical treatment. This he did to the complete satisfaction of Prof. Schultze and a number of other gynecologists who witnessed his manipulations and have since borne witness to their surprise and gratification in most cordial and unmistakable terms of praise. The reports of the cases treated by him at Schultze's clinic, were published in detail by Profanter together with an introduction by Schultze himself, under the title of "Die Massage in der Gynäkologie von Dr. Paul Profanter" (W. Braumüller, 1887).

This was the real beginning of Brandt's fame; for following Profanter's publication, gynecologists began to crowd in on him to learn his methods and from them, and in turn their pupils, emanate the glowing reports which are becoming so frequent in current literature.

Brandt's treatment includes the following procedures:

1. Various active and passive movements pertaining to the so-called Swedish Movement Cure. These are generally entrusted by him to a female assistant, who applies them according to instruc-

tions which are varied to meet the exigencies of each individual case. These do not (so his pupils say) constitute essential features of a rational treatment and may be supplanted by the various hydropathic drink and bath cures dear to the heart of the true German physician!

2. Massage.
3. Stretching.
4. Replacement of the uterus (Redression).
5. Elevation of the uterus (Uterushebung).
6. Pressure upon the pelvic nerves.
7. Abduction and adduction (against resistance) of the knees.
8. Slapping of the back and tapping of the loins and sacral region (tapotement).

Massage finds its application in cases of swelling and thickening of the organs and tissues occurring as a sequence to stasis, chronic inflammations and extravasations, as well as in subacute and acute inflammation.

Stretching is never employed in cases of acute and subacute inflammation, nor in cases of exudation. It is only indicated in cases where the ligaments are relaxed and lengthened, or shortened and contracted.

The recognized indications for massage are: metritis and endometritis chronica, subinvolution of the uterus, hypertrophy and atrophy of the uterus, parametritis, perimetritis, perioöphoritis, salpingitis, pelvic cellulitis, hæmatocele and uterine displacements, in all of which it may be employed as an auxiliary mode of treatment.

The object of stretching is to lengthen the shortened ligaments and to restore tonicity to those that have become relaxed. This procedure is never undertaken during the progress of inflammation, or in the presence of exudates. The principle involved in stretching is that a muscular irritation of short duration excites contraction, while an irritation of continued action induces elongation.

Replacement of the uterus. This is accomplished by various methods and with the patient in one of several positions—standing, knee-elbow, or lithotomy. The recto-vaginal method of replacement is employed in cases where the uterus is enlarged and retro-flexed. The operation is performed with the patient in the knee-elbow position. The operator's finger is introduced into the rectum and the thumb into the vagina, whereupon the fundus is pressed forward and downward

while the cervix is pushed backward and upward.

Ventro-vaginal replacement is practiced in the lithotomy position and is accomplished by the methods of tilting, invagination of the abdominal walls, hooking in of the finger behind the fundus and by the so-called replacement pressure. Tilting is used when the uterine walls are so rigid that pressure on the anterior surface of the cervix suffices to raise the fundus until it can be grasped by the other hand through the abdominal walls. The invagination process is resorted to when the uterus cannot be tilted forward. The fingers of the external hand are made to push back, "invaginate," the walls of the abdomen until the fundus is brought within reach, while the finger of the other hand introduced into the vagina presses the portio vaginalis backward and upward. In this manner the uterus is brought into a position of anteversion.

The "hooking" process referred to, is that which is employed when the uterus is so flexible that pressure on the vaginal portion increases the angle of flexion. The finger is introduced behind the fundus which is pressed towards the abdominal walls until the external hand is able to obtain hold of it.

The "replacement pressure" is exercised when the portio vaginalis is firmly fixed anteriorly. The internal finger presses up on the fundus and holds it in position, while the fingers of the external hand press down over the symphysis upon the isthmus uteri forcing it backward. Thereupon the internal finger of the operator is changed to the anterior surface of the cervix, close under the fingers of the external hand, and for several seconds pressure is made by both hands in a backward direction. Then while the internal finger still continues its pressure, the external hand is made to glide over the anterior surface of the uterus until it reaches the superior margin of the body, when it is turned until the finger-tips are directed forward, when they are made to sink behind the fundus which is then brought into anteversion.

Ventro-vaginal-rectal replacement. This method is adopted when the fundus is so high up that it cannot be reached by the internal finger, in which case it becomes necessary to make it more accessible by downward pressure exercised by the disengaged hand. The patient is placed in the lithotomy position. The left index finger is next

introduced as high as possible into the rectum. The fingers of the disengaged hand are then laid upon the abdomen in the vicinity of the fundus and made to execute, under moderate pressure, a circulatory rubbing motion in the direction of least resistance while the effort is made to bring the fundus gradually downward and forward. If it is not possible in this way to reach the posterior surface of the uterus, the effort is aided by the introduction of the left thumb into the vagina the index finger meanwhile remaining *in situ*. The thumb is then employed to press the cervix backward, while the index finger raises the fundus until it can be grasped by the fingers of the unemployed hand when it is in this manner brought into place.

Our limits do not permit the completion of the discussion of this subject in the present issue of THE JOURNAL. In the next number we propose to discuss the method ascribed to Brand, and which no doubt originated with him. The importance of the subject is such that it merits the careful consideration of the profession.

SECONDARY STREPTOCOCCUS PNEUMONIA.

In continuation of his study of diphtheria, PRUDDEN publishes his promised researches on the etiology of pneumonia.¹ He finds uniformly in the fresh exudate in the air-vesicles of the lungs of children dead of diphtheria the same streptococcus which was always present in the pseudomembrane in the throat. As control experiments, the exudates from cases of pneumonia in children, not secondary to diphtheria, were similarly examined, and in only one case was a streptococcus found, and then in a case complicating erysipelas. The presence of the streptococcus in these pneumonias is adequately demonstrated, and there can be no doubt that it is the prime and essential etiological factor of the local disease. The relation of the streptococcus to diphtheria, however, is probably secondary and non-essential.

These researches on the etiology of secondary pneumonia in diphtheria are in perfect accord with the investigations of the bacterial condition of pneumonias secondary to other infectious diseases. We may refer to Newmann (1886), Manfredi, Tobnitz and A. Fränkel (1887), Guarnieri (1888),

¹ T. Mitchel Prudden and William P. Northrup: Studies on the Etiology of Pneumonia Complicating Diphtheria.—"The American Journal of the Medical Sciences," June, 1889.

and Babes and Raskin (1889). Each of these authors reports pneumonias, secondary to the various acute infectious diseases, the prime etiological element of which was a streptococcus. Fränkel very properly pointed out that the microbe gains access to the body through the atrium furnished by the local lesion of the primary disease.

Babes and Raskin have shown conclusively that the nephritis and synovitis, as well as the pneumonitis which follow the acute infectious diseases of children, are due, in the great majority of cases, to a secondary infection, with the *streptococcus pyogenes*.

While it is greatly to be deplored that any single institution can furnish the material for such extended researches as these of Prudden and Northup, we may take a measure of consolation from the fact that the enthusiasm and scientific courage have of the pathologists have wrung out of wholesale disaster such an important lesson. Let the medical profession recognize in the complications of the acute infectious diseases, a septic process as independent and foreign to the primary disease as suppuration and erysipelas are to the reparative process in wounds, and we shall not wait long for a method of treatment which will banish them to the seclusion which has been sought by the wound diseases and puerperal fever.

THE OPHTHALMOSCOPE.

The ophthalmoscope, at one time considered as nothing but an interesting scientific toy, has become an indispensable instrument in physical diagnosis. Its history is a succession of triumphs. The wonderful progress made within the last thirty years in ophthalmology is altogether due to this instrument. By its means the neurologist has been able to penetrate the mystery which enshrouded many cases of brain and spinal disease, and our knowledge of kidney diseases, secured from the ophthalmoscope a valuable contribution when it revealed the existence and nature of the various forms of ocular disturbances concomitant with and due to nephritic disorders. In view of these facts should not the use of so important an instrument be thoroughly taught in our medical colleges? Should not every physician be equipped not with the instrument alone, but with the knowl-

edge and experience necessary for its practical use. Yet how far we are from this state of things. How few of our graduates know how to "throw light into the eye," and of these how small the number who know what they see in the field thus illuminated. If these men only knew enough to know what they don't know, the case would not be so bad, but ignorance is proverbially arrogant, and hence the mistakes of the ignorant are prone to escape correction. It is really humiliating to witness a graduated physician attempting to examine an eye while the light reflected from the mirror is seen illuminating the wall beyond the patient's head, and how often serious blunders in diagnosis occur is best known to those who have had an opportunity to watch graduates at work with this instrument.

A more thorough instruction in the use of the ophthalmoscope is imperative, and our medical colleges should see to it that the student be thoroughly trained in its use. Of course it cannot be expected that the general practitioner shall be an expert, that should be left to the oculist, but every medical man should at least be able to recognize the difference between a transparent and an opaque lens, a normal papilla and a choked disc, and a healthy retina and one affected with retinitis. Then will men be able to recognize also their limitations, and serious blunders will not be so common. Until this condition of things is brought about we cannot lay claim to that high standard of medical education which should characterize the curriculum of the American medical colleges.

THE DISASTER.

The sympathies of the Nation for the past week have been centered upon the sufferers of the Conemaugh Valley. Ten days have now elapsed since the occurrence of that fearful calamity. The actual condition, sad as it is, is less appalling than at first reported. A conservative estimate reduces the number of dead to about five thousand. From the bulletin issued by the State Board of Health, on June 9th, we learn that the general health in the region of the disaster is excellent; that there is no evidence of epidemic disease; that the whole country has been districted and each section placed under control of a competent sanitarian—and it is confidently believed that the work of reclamation will be carried on so rapidly

and so well that the general health in the locality will be maintained. This is well, and we heartily commend the State Board of Health for this efficient action.

But the question which we wish to emphasize is this: Who is responsible for this wholesale destruction of human life? Had the Valley been devastated by a volcanic upheaval or had a cyclone swept it to destruction, human agency would not be responsible for that which it could not control. But here it is not so. The primal cause of this calamity was the work of human hands. It was legitimately under the surveillance of sanitary inspection. It could have been averted by legitimate authority and somebody is responsible for the loss of these five thousand lives.

EDITORIAL NOTES.

UNIVERSITY OF PENNSYLVANIA.—We learn from a contemporary that the Associate Professorship of Obstetrics in the Medical Department of this University, recently vacated by Dr. Howard A. Kelly who has accepted the appointment as Gynecologist to the Johns Hopkins Hospital, is not likely to be filled. It is understood that Dr. Barton C. Hirst, the present Associate Professor of Obstetrics, will also undertake the duties of Gynecologist.

A TESTIMONIAL FREE BED.—The friends of Dr. R. J. Levis, of Philadelphia, the well-known surgeon to the leading hospitals of that city, are desirous of recognizing his distinguished public services by perpetually endowing a testimonial free bed in the Polyclinic Hospital. A committee, during his absence in Europe, are endeavoring to raise \$5,000 for this purpose, and think it is eminently appropriate that the testimonial should be donated to the Philadelphia Polyclinic since he was one of its founders, its first professor of clinical and operative surgery, and from its organization has been president of the board of trustees.

The Committee having charge of raising the desired amount request that subscriptions be sent to Dr. H. Augustus Wilson, Treasurer, 1611 Spruce St., Philadelphia.

THE PHYSICIANS OF CINCINNATI and of that vicinity are making up a special train of palace cars, for the purpose of attending the meeting of the American Medical Association at Newport.

The President of the Association, Dr. W. W. Dawson, will be a member of the party, and the coach assigned to him is designated—*the President's car*.

MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.—The following changes have been made in the Faculty: Frank Woodbury, A.M., M.D., Honorary Professor of Clinical Medicine. William B. Atkinson, A.M., M.D., Honorary Professor of Sanitary Science and Pædiatrics. John V. Shoemaker, A.M., M.D., Professor of Materia Medica, Pharmacology, Therapeutics and Clinical Medicine. James M. Anders, Ph.D., M.D., Professor of Hygiene and Clinical Diseases of Children.

MEDICO-LEGAL SOCIETY OF CHICAGO.—The annual meeting of this Society, was held on the 1st inst., when the following officers were elected for the ensuing year: President, Dr. E. J. Doering; Vice-Presidents, Dr. Boerne Bettman and Mr. Eric Winters; Treasurer, Dr. L. L. McArthur; Secretary, Dr. Edward B. Weston. Surgeon-General John B. Hamilton, of Washington, was elected an honorary member, and Drs. J. C. Hoag and H. J. Tillotson active members.

TENTH INTERNATIONAL MEDICAL CONGRESS.—We are reliably informed that the Tenth International Medical Congress, to be held in Berlin, will commence on the 7th of August, 1889. The preliminary arrangements are in active progress.

WE are advised that Sir James Grant and several other distinguished Canadians, have accepted the invitation to be present at the meeting at Newport.

AMERICAN LARYNGOLOGICAL ASSOCIATION.—At the Eleventh Annual Congress of this Association, held in Washington from May 30 to June 1, the following were elected officers for the ensuing year: President—Dr. J. N. Mackenzie, Baltimore. First Vice-President—Dr. Edgar Holden, Newark. Second Vice-President—Dr. C. E. Bean, St. Paul. Secretary and Treasurer—Dr. C. H. Knight, New York. Librarian—Dr. T. R. French, Brooklyn. Council—Dr. Franklin H. Hooper, Boston; Dr. George M. Lefferts, New York; Dr. Frederick I. Knight, Boston; Dr. D. Bryson Delavan, New York. Representative on the Committee of the Congress of American Physicians and Surgeons—Dr. Harrison Allen, of Philadel-

phia. Dr. Wm. C. Casselberry, of Chicago, and Dr. H. L. Swain, of New Haven, Conn., were elected to membership.

ASSOCIATION NEWS.

American Medical Association. Fortieth Annual Meeting.

The following additional titles of papers to be read at the approaching meeting have been received since the Programme was published in THE JOURNAL of June 1 :

Section on Dermatology and Syphilography.

"Clinical Notes on Alopecia Areata," by Lewis Wickham, of the Hôpital St. Louis, Paris, France.

"General Points on the Treatment of Inflammatory Diseases of the Skin," by Oscar Lassar, Berlin, Prussia.

Exhibition of Specimens illustrating Change of Color in the Hair from the Internal Use of Pilocarpine, by D. W. Prentiss, Washington, D. C.

"Two Years' Experience with the Hypodermatic Injection of Insoluble Mercurial Salts in Syphilis," by J. N. Bloom, Louisville, Ky.

"Treatment of Syphilitic Glands by Injection of Iodine, by Fayette Dunlap, Danville, Ky.

"Eruption produced by the Internal Use of Rhubarb," by H. Goldenberg, New York.

"The Influence of Clothing on the Skin," by J. Leslie Foley, Boston.

Section on Surgery and Anatomy.

What Dressing shall lie Next to the Womb?" by R. T. Morris, New York.

"Cranial Surgery," by H. O. Walker, Detroit.

"Unique Case of Fractured Exostosis of Pubis," by Thos. H. Manley, New York.

"Improved Surgical Pump," by Elmer Lee, St. Louis.

"The Surgery of the Spine," by Wm. White, Philadelphia.

"Incomplete Inward Dislocation of the Radius and Ulna at the Elbow," by Albert F. Stifel, Wheeling.

Section on Ophthalmology.

"Insufficiency of the Recti Muscles, with Report of Cases," by J. E. Colburn, Chicago.

In the published programme for this Section the title of Dr. P. D. Keyser's paper appears "Glaucoma Fulminans, after Operations," when it should be "Glaucoma Fulminans after Cataract Operations with Iridectomy."

Section on Dental and Oral Surgery.

"The Origin of Pus," by W. H. Atkinson.

Series of Lantern Exhibits in Embryology, by W. Xavier Sudduth, M.D., D.D.S., F.R.M.S., of Philadelphia.

The lantern used will be the new and improved lantern of the McIntosh Battery and Optical Co., and will be operated by Dr. McIntosh, of Chicago. "Teeth of Pregnant Women," by John Marshall, of Chicago.

PROPOSED RULES FOR SECTIONS.

The following rules are recommended for the government of the Sections :

1. Reading of papers limited to twenty minutes each.

2. Discussion limited to five minutes for each speaker.

3. All who take part in the discussions do so with the *express agreement* that they will write out the substance of their remarks for publication, before leaving the room.

CHANGES IN PROGRAMME.

We have been requested by Dr. H. R. Storer, Chairman of the Committee of Arrangements, to publish the following alterations in General Programme :

First Day. Under Announcements, insert "that Rush Monument Committee meets at Music Hall immediately after adjournment, and that the Sections and Judicial Council meet at 2 P.M., at the Casino," etc.

Alter to "Addresses of Welcome by His Excellency, Hon. Herbert W. Ladd, Governor of Rhode Island," etc.

Second Day. Prayer. R.R. Thos. M. Clark (Episc.), Bishop of Rhode Island.

After Dr. Pepper's Address, insert "Report of Rush Monument Committee."

Third Day. Prayer. Rev. James Coyle (R. C.) of Newport; R.R. Dr. Harkins, Bishop of Providence, being prevented by duties attending the consecration of the Cathedral of the diocese.

Strike out Report of Rush Monument Committee.

Fourth Day. Meeting at 10, instead of 9.

"Prayer. Rev. D. A. Jordan (M. E.), Presiding Elder, Providence District, N. E. Southern Conference."

RAILROAD ARRANGEMENTS FROM NEW YORK.

Dr. Liston H. Montgomery, of Chicago, a member of the Committee of Arrangements, informs us that the Old Colony Railroad will sell tickets from New York and all points on their line at a fare and a third (certificate plan) for the round trip, thus enabling those who go from points west of Buffalo, Niagara Falls, Pittsburgh and Wheeling, after they purchase their tickets to New York, to avail themselves of this reduction.

The round trip fare by Fall River Boat Line is \$4.50, by rail, Short Line, \$7.65.

"THE AMERICAN MEDICAL ASSOCIATION ANNUAL."

We are requested by the Chairman of the Committee of Arrangements, Dr. H. R. Storer, to

state that he peremptorily refused to give any aid or information to the outside party referred to in the "Special Notice" published in the editorial department of THE JOURNAL on June 1.

SOCIETY PROCEEDINGS.

American Laryngological Association.

Eleventh Annual Congress, held in Washington, D. C., May 30, 31, and June 1, 1889.

FIRST DAY.—MORNING SESSION.

The Association was called to order by the President, DR. ETHELBERT CARROLL MORGAN, of Washington, who delivered the

PRESIDENTIAL ADDRESS.

He expressed the profound pleasure which he experienced in welcoming the Association to the National Capital, the home of the scientific libraries, laboratories and museums, fostered and encouraged by a liberal government. The Association had wisely followed in the wake of numerous other scientific bodies, which make pilgrimages to our city and exert a healthy influence toward popularizing their special fields of scientific investigation. The noble work of this Association during its eleven years of existence has resulted in placing laryngology upon a substantial basis and in demonstrating its truths and benefits alike to the profession and to suffering humanity. The outlook for laryngology was never brighter than at present.

The tenth volume of the "Transactions" is now in press, and in addition to the papers read at the last meeting of the Association, contains a table of contents of all the papers read to the Association since its organization.

An important amendment to the constitution, increasing the limit of active fellowship, comes up at this meeting. The present limit is fifty, and there are at present no vacancies.

Our library now contains nearly 900 separate titles. The librarian thinks that the collection would be more accessible if in charge of the Surgeon-General's office, and recommends its donation to that library. The Association has lost no members by death since the last meeting.

After some suggestions in regard to the social features of the annual meetings, the president closed by reiterating the assurance of his heartfelt appreciation of the good-will and friendship which had influenced the Association in selecting him as the president of this distinguished body.

DR. E. CARROLL MORGAN, of Washington, D. C., reported a case of

REMOVAL OF A SUPERNUMERARY TONSIL.

The patient, a male, æt. 26 years, vigorous and

otherwise healthy, came under observation Sept. 7, 1886, with what he feared was malignant disease of the pharynx. The growth was first discovered four years previous. It had occasioned considerable pain, especially after smoking. During the past two months the growth had rapidly increased in size and the pain had become of a shooting character, extending to the ears, larynx and top of the head. Examination revealed a pendant tumor between the right palatine folds near the uvula and protruding beyond their borders half an inch. The tumor was as large as a small almond. Its color, as well as that of the pillars, was a dusky red. Slight engorgement of the cervical glands appeared to exist. The patient's mother had died of cancer of the breast, and he felt convinced that the growth was malignant. Local and general treatment having no effect, the tumor was excised and the raw surface cauterized with the hot iron. In ten days the wound had healed. The patient was recently examined and there had been no recurrence, now four years after the operation. The specimen removed was examined by Dr. W. M. Gray, microscopist to the Army Medical Museum, who stated that its structure was identical with that of a faucial tonsil which had undergone hypertrophy. The location and microscopic characters of this tumor, as well as the history of the patient prior and subsequent to the operation, proves that this was a hypertrophied accessory or supernumerary tonsil, an exceedingly rare anomaly. A search of the literature had revealed only two other cases of a similar character, reported by Jurasz in 1885. In the first case the tumor was as large as a hen's egg, and was found to spring from the lower anterior portion of the right posterior pillar, by a small and short pedicle. It was removed and found, on microscopical examination, to present the structure of a hypertrophied tonsil. In the second case the tumor was of the size of a hazelnut, and attached below the right tubal prominence. The microscope revealed a structure similar to that of the faucial tonsil.

Conclusions.—1. The lymphoid follicles of the soft palate and pharynx are liable to be aggregated, resembling in arrangement the faucial tonsil. 2. The condition is exceedingly rare, since, excepting the so-called "pharyngeal tonsil," the author has found but one case reported. 3. These lymphoid follicles are also liable to hypertrophy. 4. Such hypertrophies probably occur oftener than is generally supposed. 5. The indications for operative interference in this condition are identical with those for the faucial tonsil.

DR. D. BRYSON DELAVAN, of New York, thought that possibly cases of supernumerary tonsil were not so infrequent as was commonly supposed. Pedunculated tumors of the tonsil which, on examination, show a fibroid structure, are not rare, and it may be that there are degen-

erated supernumerary tonsils; just as the tonsil may, from long continued inflammation, become the seat of fibroid change.

DR. GEORGE W. MAJOR, of Montreal, read a paper on

THE RELATION BETWEEN FACIAL ERYSIPELAS
AND ERYTHEMA ON THE ONE HAND, AND IN-
TRO-NASAL PRESSURE ON THE OTHER.

The following cases were cited to show that facial erysipelas may be produced by nasal conditions, particularly when they are productive of pressure:

Case 1.—A girl aged 12 years came under my observation in March, 1884, for the treatment of nasal catarrh. There was a general hypertrophic condition, with pressure of the middle turbinated body of one side against the septum. On the cheek bone of the same side there was a red patch of erythema, which had existed for five months. Treatment of the nasal condition by scarification, puncture and galvano-cautery was followed by disappearance of the erythematous rash, and it has not returned.

Case 2.—A child 4 years of age was seen in February, 1885, suffering with facial erysipelas, commencing on the bridge of the nose and extending to the cheeks. It had already lasted five days, and was not disposed to yield to treatment. Both nostrils were occluded by swelling. All treatment directed to the relief of the erysipelas was suspended, and attention directed to the relief of the nasal condition. In twenty-four hours the erysipelas had disappeared.

Case 3.—In the winter of 1884, a boy, aged 12 years, the subject of recurring attacks of erysipelas, was seen with an attack involving the nose and cheeks. Nasal injections alone were used, and the erysipelas disappeared in thirty-six hours.

Case 4.—February, 1889, a female, aged 56, presented herself with an erythematous patch on the left cheek. This had lasted four months. There was swelling of the left turbinated bone, which pressed against the septum. Under treatment of the nose the erythema disappeared in the course of a week.

Six other cases were alluded to, in which the same condition was seen.

DR. J. O. ROE, of Rochester, had seen a number of cases of erythematous rash due to the nasal trouble. A case recently seen was that of a girl, 23 years of age. There was a very red erythematous patch on the face associated with blebs. She had been treated by various physicians without benefit. In both nares the middle turbinated bodies pressed firmly against the septum. This was relieved and there was immediately a subsidence of the erythematous trouble. He, however, could not admit that erysipelas is due *per se* to the intra-nasal trouble. He held that erysipelas is an infectious disease

due to a distinct germ. The presence of erosions in the nasal cavity would render the patient more liable to become infected.

DR. J. N. MACKENZIE, of Baltimore, said that the relation between erythema of the nose and face and intra-nasal trouble had been recognized centuries ago in the time of Willis and by Sylvius. He himself had seen many cases of this kind, but he had never seen true erysipelas due to this cause. So-called facial erysipelas seems to be comparable to an accentuation of the act of blushing—a sort of chronic blush.

DR. WILLIAM H. DALY, of Pittsburgh, was not a believer in the theory of intra-nasal pressure. The evils referred to pressure are really due to intra-nasal turgescence. The condition of erythema is nothing more than a condition of hyper-nutrition due to a permanently dilated and enlarged blood supply. He believed that the term chronic facial erysipelas is a misnomer.

DR. F. I. KNIGHT, of Boston, remarked that in these cases of erythema of the nose and face he always looked for nævus and very often found it. Where the trouble has been relieved, the affection of the skin has disappeared.

DR. D. BRYSON DELAVAN, had seen several of these cases, and in three or four the erysipelalous attacks have been severe. One case, a girl of 17 years, had recurrent attacks of severe erysipelalous swelling from the alæ of the nose extending over the cheek. These recurred at intervals of two or three weeks. There was marked turgescence of the nasal mucous membrane. This was treated topically, and with the subsidence of the catarrhal trouble the attacks of erysipelas disappeared.

DR. SAMUEL W. LANGMAID, of Boston, then reported

A CASE OF ACUTE MULTIPLE ADENITIS (SEPTIC?)
CEDEMA OF THE LARYNX WITH SPON-
TANEOUS CURE.

He was called to see a lady, æt. 40, who had been sick for seven days, under the care of an irregular practitioner. The patient was found restless, with an anxious expression, breathing with difficulty, and with a dry, croupy cough. There was no lividity of the face, but it was stated that during the preceding twenty-four hours there had been danger of strangulation. The submaxillary glands, as well as those in the region of the neck, were much swollen. Temperature 99°; voice fairly loud and clear; no enlargement of the tonsils; nothing unusual in the naso-pharynx. With the laryngoscope a tumor, apparently as large as a filbert, was seen occupying the posterior arytenoid space. The anterior third of the vocal cord could be seen approximated and scarcely moving during respiration. He learned that the throat had not been examined until four days after the commencement of the attack. As

the patient was breathing fairly well it was decided to do nothing. If necessary, the tumor in the larynx was to be incised. A few hours later something was felt to break in the throat, and a free mucoid discharge took place. Three hours later, nothing could be seen but the erect epiglottis, with muco-purulent matter welling up. There was a continued discharge, but the relief to breathing was not complete. There had been, also, the discharge of half an ounce of pus. The discharge continued for several days, and the patient gradually recovered.

It was thought that the case was in all probability due to diphtheria, the evidences of which had passed away when the author examined the throat. The patient stated that at the commencement of the illness, the throat had been sore, and that on one side she had noticed red spots on which there had been a white covering.

DR. WM. C. GLASGOW, of St. Louis, read a paper on

AN ŒDEMATOUS FORM OF DISEASE OF THE UPPER AIR-PASSAGES.

He described an œdematous form of disease which had been epidemic around St. Louis for some two years. During the existence of this affection there has been a disturbance of the ordinary catarrhal troubles. In all cases of this disease there is found a pale, œdematous condition of the fauces. This is a solid œdema. A peculiar glistening appearance is at times very marked. In the majority of cases the soft palate is the seat of œdema. At times the nasal mucous membrane is found in the same condition. The epiglottis and different portions of the larynx may be involved. In some cases the true cords are markedly œdematous. A swollen condition of the veins, particularly the palatine veins, is present. This sometimes causes purpura-looking spots, and the mucous membrane appears mottled. In two cases these purpura-looking spots had been seen in the trachea. In one case enlarged veins were seen on the true cord. In some cases ulceration occurs. In some cases, in addition to œdema, there were patches of exudation in different parts of the throat. These when removed leave a bleeding surface. The symptoms of the disease and the appearance of the throat preclude the diagnosis of diphtheria. In six cases spots of mycosis were seen. Glandular enlargement of the neck is quite frequent. In two cases suppuration occurred.

The symptoms are constitutional and local. The affection occurs suddenly in persons of previous good health. There is languor, weakness, and general pains throughout the body. Headache is present, usually frontal, sometimes occipital. In many cases it is simply a dull heavy feeling, in others it is an intense violent throbbing pain. Pain in the back in the region of the

sacrum is a characteristic symptom. Fever is present in varying degree. In the exudative cases, the disease commences with chill followed by fever, and the temperature may reach 105° . This soon passes off, and we have a subfebrile condition remaining, probably with a temperature of 101° . This continues a short time, and then there is a return to the normal temperature. When there is simple œdema, the temperature scarcely ever rises above 101° to 102° . This remains for only twelve hours, and during the remainder of the attack the temperature is normal. The pulse is always rapid, soft, and compressible; there has been no exception to this noted. The pulse ranges between 90 and 110 per minute. Profuse sweating is often present, especially during the night. It may be localized.

AFTERNOON SESSION.

DR. JOHN N. MACKENZIE read a paper on

SOME POINTS IN THE PATHOLOGY AND TREATMENT OF DISEASES OF THE NASAL PHARYNX.

The following conclusions were presented :

1. The nasal pharynx is in quite a large proportion of individuals exceedingly sensitive to reflex-producing stimulation.
2. The areas chiefly involved are the posterior portions of the turbinated erectile tissue, and various points along the upper and posterior portions of the nasal pharynx.
3. In consequence of this extreme sensitiveness, a local pathological process which in many persons would give rise to no reflex neuro-vascular changes may awaken a host of neurotic phenomena referable not only to the region primarily involved, but also to others and even remote organs of the body. These may include cough, asthma, and various neuralgic affections ; or the local structural lesion may be the starting-point of various sympathetic affections of the respiratory tract.
4. That these classes of naso-pharyngeal neuroses are explicable on the same general principles laid down in the article on neuroses of the nose, and the pathology of the nasal and post-nasal affections is, therefore, one and the same.
5. That the treatment should be carried out according to the general directions laid down in the article just mentioned.
6. That when morbid processes originate in the pharyngeal tonsil, attention should not be directed to the bursa alone, but an endeavor should be made to extirpate the tonsil as far as possible in its entirety.
7. That while a favorable prognosis cannot be safely predicted by the treatment of the bursa alone, extirpation of the pharyngeal tonsil often affords a most favorable prospect in long-standing cases of post-nasal trouble.

DR. D. BRYSON DELAVAN then presented some

OBSERVATIONS UPON THE CONDITION KNOWN AS
ADENOID HYPERTROPHY AT THE VAULT OF
THE PHARYNX, AND THE METHODS
USED FOR ITS REMOVAL.

A case was described in which with each acute attack of catarrhal trouble there would be enlargement of the adenoid tissue of the vault of the pharynx, forming a large tumor. When the attack passed away the hypertrophy disappeared. The author then referred to the methods of operation and the accidents which might occur. As the operation was attended with considerable pain he suggested the employment of anæsthesia. He had in a number of cases employed chloroform with satisfactory results, the object being to avoid the profuse mucoid secretion which is apt to follow the use of ether. Where chloroform is used the operation is performed with the patient on his back.

DR. F. H. HOOPER, of Boston, reported a case of a young lady who came to him with acute coryza and in whom he found a large-sized adenoid of the vault. After the attack subsided, the adenoid almost entirely disappeared. In order to avoid error, the post-nasal probe should always be used. With it conditions not apparent to the eye may be recognized. He had never seen serious hemorrhage follow operations for the removal of the tissue. In operating he first removes all that is possible with the post-nasal forceps and completes the removal with the finger-nail. He had never used chloroform. The amount of secretion after the use of chloroform varies very much in different cases.

DR. HARRISON ALLEN, of Philadelphia, advocated the use of the finger as a means of detecting these post-nasal affections. To examine the case thoroughly requires the use of an anæsthetic. In the treatment of adenoid hypertrophy, it is better to remove all the diseased tissue at one sitting under ether than to remove it in portions at different times.

DR. J. C. MULHALL held that for practical purposes the pathology of the pharyngeal tonsil was exactly the same as that of the faucial tonsil. In operating, he had applied cocaine thoroughly to the pharyngeal wall and soft palate to avoid the disagreeable sensation caused by the scraping of the forceps against the healthy pharyngeal wall, and had succeeded very well.

DR. F. I. KNIGHT related a case of acute hypertrophy of the faucial tonsil in which the surgeon performed tracheotomy preparatory to removing the tumor. When he came to operate he found that the growth had disappeared.

DR. WILLIAM E. CASSELBERRY, of Chicago, referred to the importance of thoroughly eradicating these growths. In two cases in which portions of the mass had been left, the reflex symptoms, while greatly lessened, continued to recur. In two cases he had attempted to use the mirror

during operation. To do this he pulled the soft palate forward by two rubber bands, passing through each nostril. In one case he succeeded to a certain extent, but in the other failed. This procedure, however, greatly facilitated the operation. In order to prevent the passage of blood into the larynx he was in the habit of bending the head forward at intervals in order to allow the escape of the blood.

DR. J. N. MACKENZIE, as a rule, operates without anæsthesia, removing a portion of the mass every day, or every other day, continuing the operation for a week or ten days. He had seen very little pain from the operation. There is one point in regard to the nature of this so-called adenoid. He had examined a number of these growths under the microscope and they do not differ from papillomatous growths. There is also in addition a true adenoid growth; this is more difficult of removal than the former.

DR. F. H. HOOPER read a paper on

EXPERIMENTAL METHODS OF STUDYING THE ACTIONS OF THE INTRINSIC MUSCLES
OF THE LARYNX.

He exhibited the apparatus which he had employed in studying the effect of stimulation upon the internal thyro-arytenoid, the lateral crico-arytenoid, and posterior crico-arytenoid muscles. The larynx of a dog is quickly excised, the mucous membrane removed, and the muscles subjected to electrical stimulation.

The local symptoms vary with the part of the throat invaded. Sometimes they are prominent, sometimes they are wanting. Hæmorrhages are common, are usually slight, but recur frequently.

This is a constitutional disease, due, the author believes, to some change in the blood; exactly what, he was unprepared to say, but probably due to microorganisms. He thought that the disease described was nothing more than influenza, the same influenza which has been described so often, particularly by Graves. The disease has not been limited to the Mississippi Valley, for the speaker had seen cases of it from all parts of the country.

The treatment is very simple. The system must be saturated with benzoate of sodium. Under this remedy the affection subsides in a few days or hours. If left to itself it may continue for weeks or even months.

DR. W. H. DALY, of Pittsburgh, had seen a number of cases similar to those described. He did not consider the condition as one of œdema, but rather as a subacute inflammatory condition of the mucous membrane. There was a sufficient number of these cases which had thin and superficial diphtheritic patches in various parts of the fauces to warrant him in considering the disease of a diphtheroid character. This view was confirmed by the subsequent occurrence of glandular enlargement in nearly all the cases.

DR. J. C. MULHALL, of St. Louis, confirmed the statements of Dr. Glasgow from his own experience with the disease in St. Louis, and reported a case in which the affection had recurred three times.

DR. S. H. CHAPMAN, of New Haven, had seen cases similar to those reported, but agreed with Dr. Daly that they are rather of a diphtheritic character. In one case the disease attacked a child of 17 months. In the same family was a boy 9 years of age with well-marked diphtheria. The first thing noted in the case of the child was a dense swelling of the submaxillary gland. There was great prostration and some fever, 100° – 102° . The swelling increased until it extended from the jaw to the clavicle. There was hoarseness and difficulty of breathing, which daily increased. By the seventh day it had increased so much that deep incisions were made into the gland, but no pus was found. A tube was then inserted into the larynx and allowed to remain four days. The child during this time was kept alive by rectal alimentation. At the end of *thirteen* days the swelling began to diminish. The knife was again used and a quantity of pus discharged. The child recovered.

DR. C. E. SAJOURS, of Philadelphia, referred to a case of this disease which occurred in a young man living on a farm in New Jersey, twenty miles from any neighbors, and who had not been exposed to diphtheria. The throat presented small white patches not resembling the yellowish leathery membrane seen in diphtheria. Slight oedema of the soft palate was also present. The temperature was high throughout the entire course of the disease. There was incessant pain in the back and in one limb. After trying a number of remedies, he was placed upon benzoate of sodium.

DR. W. C. GLASGOW, of St. Louis, remarked that he had at first regarded these cases as diphtheritic. In these cases the membrane is adherent; it can be torn away, but a bleeding spot is left. Applications made it worse. If left to itself, it gradually grows thinner and thinner until it resembles a white pearly patch. Diphtheritic membrane does not pursue such a course. The glandular enlargements always occur, even when there is no exudation. He did not think that any one would assert that this oedema was diphtheria.

DR. W. H. DALY, of Pittsburgh, made some remarks on

THE INTIMATE RELATIONS OF CHRONIC DISEASES OF THE UPPER AIR TRACT AND NEURASTHENIA.

His experience had led him to believe that there was an intimate relation between conditions of the intra-nasal cavities and neurasthenia in some of its forms. This view was based upon the study of twenty-five cases. In these cases removal of the nasal trouble was followed by relief of the neurasthenic condition, no special treatment being directed to the general condition.

DR. J. O. ROE, of Rochester, said that most of the members had seen many such cases, and they illustrate the effect that a constant local irritation will have upon the system. A constant nagging of a local irritant will sooner or later produce a depressed condition of the system.

DR. F. W. HINKEL, of Buffalo, remarked that before we could admit that neurasthenic conditions could be the result of any nasal lesion as the sole cause, a careful analysis of all the constituent conditions would be required.

DR. S. W. LANGMAID, of Boston, thought that often the nasal trouble was the result of the neurasthenia. It often happens that operative interference fails to relieve the nasal condition because the neurasthenia is not cured.

DR. C. E. SAJOURS, of Philadelphia, was inclined to support rather vigorously the view of Dr. Daly. In a number of cases he had observed that there were fluctuations in the nervous condition according as the local disease improved or became worse. In one case of neurasthenia associated with deviated septum, correction of the displacement was followed by improvement in the nervous condition. The operation, however, failed to be permanent, and with a return of the deviation the neurasthenic condition recurred, to again disappear with a more thorough operation upon the septum.

DR. F. I. KNIGHT then read a paper on

DYSPHONIA SPASTICA.

He briefly reported the four cases of this affection which he had seen in the last seven years. He regarded the condition as rare; there is probably a spasmodic action of the muscles of phonation, or respiration, or both, giving rise to a high-pitched, jerking voice. The prognosis is unfavorable. The object of the paper was to elicit reports of other cases.

DR. G. W. MAJOR had seen one case of aphonia spastica and two cases of dysphonia spastica. In none of the cases was benefit obtained by treatment.

DR. S. W. LANGMAID had reported one case in which treatment was unsuccessful. The patient, when he had to use his voice, prescribed for himself a little whiskey, and this answered temporarily. There seems to be no change in the voice since the affection first came on, fifteen years ago.

DR. DELAVAN said that in one case coming under his observation the patient was able to talk tolerably well after fortifying himself with a stimulant. This patient seemed to improve under local treatment to the larynx and vocal training, but the treatment could not be continued.

DR. C. E. BEAN, of St. Paul, had seen one case two years ago. Various methods of treatment had been employed without benefit. The voice is now the same as at the commencement.

DR. RUFUS P. LINCOLN, of New York, read a paper on

RECURRENT LARYNGEAL GROWTH.

The patient had come under the care of the late Dr. Elsberg, twenty-four years ago. Dr. Elsberg first operated by the intro-laryngeal method, but could not remove the growth. Twenty-two years ago he did laryngotomy and removed the growth. The microscopical examination made at that time was unsatisfactory. There was no further trouble until a short time ago when the growth recurred. Dr. Lincoln recently removed the tumor, which on microscopical examination proved to be a papilloma.

(To be concluded.)

Connecticut State Medical Society.

Ninety-eighth Annual Meeting held in Hartford, Conn., May 22 and 23, 1889.

FIRST DAY.

DR. GEO. L. PORTER, the President of the Society, in delivering his Address, made remarks on the present standing of the Society, and agreed with the President of last year, that radical changes should be made in the manner meetings are now held, alternately at New Haven and Hartford.

DR. W. W. KNIGHT, the Treasurer, reported that there was a balance in the treasury of \$277.24.

The election of officers resulted as follows: President, Dr. O. Brown, of Washington; Vice-President, Dr. Melancthon Storrs, of Hartford; Treasurer, Dr. W. W. Knight, of Hartford; Secretary, N. E. Wordin, of Bridgeport; Committee on Matters of Professional Interest, Dr. Henry Fleischner, Dr. C. H. Beach, Dr. F. D. Edgerton; Delegates to the Pharmaceutical Association, of 1890, Dr. C. A. Lindsley, Dr. F. J. Young, Dr. O. J. D. Hughes; Delegates to American Medical Association, Drs. F. H. Wiggins, M. Storrs, M. A. Cremin, R. S. Goodwin, W. Cummings, J. Olmstead, C. N. Alling, E. T. Bradstreet, F. L. Smith and Wm. Winter. Delegates were also appointed to attend the State meetings of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, New York and New Jersey.

Dr. E. M. Moore, of New York State, was elected an honorary member, and the name of Prof. Wm. H. Welch, of the Johns Hopkins University, was proposed. This, in accordance with a by-law, went over for one year. After transacting other business of minor importance the meeting adjourned.

In the evening the members were received at the residence of Dr. Wainwright.

SECOND DAY.

The meeting was called to order at 9 A.M. The Secretary, Dr. N. E. Worden, reported that there had been 32 new members admitted during the year, and that present membership is 508.

DR. L. B. ALMY, Chairman of the Committee on Matters of Professional Interest, gave the results of papers sent to the doctors in different parts of the State, asking what had been their experiences with antipyrin, antifebrin, phenacetin, sulphonal and saccharin. The drugs had been pretty thoroughly used and generally the results were satisfactory.

DR. P. H. INGALLS of Hartford, read a paper on

UTERINE CANCER.

The author thought no faith was to be put in the hereditary theory. He said that the theory of local origin was fast gaining ground and he would not be surprised if in the future a germ would be isolated as the cause of cancer. The generally accepted causes are age, child-birth and injuries. Thomas says he never knew a woman to have uterine cancer who was never pregnant. Early diagnosis was very important, and if there was any suspicion of cancer the microscope should be used to decide. Surgical interference was the only treatment, except opium for pain and a solution of permanganate potassium for the bad-smelling discharges. Good hygienic surroundings were of course necessary. Operation should be early and thorough. If the disease had extended beyond the uterine tissue it was too late to operate, as it only increased the inflammation. He spoke of the different operations, but preferred vaginal hysterectomy.

DR. J. G. HOLMES, of New Britain, read a paper on

SCARLET FEVER.

This paper was a general review of the disease with the treatment and hygiene.

DR. SETH HILLS read a paper entitled

PHTHISIS PULMONALIS.

The theory of contagion in this disease was spoken of, and the author claimed no one had consumption without taking it from some outside source. The typhoid-fever germ was hunted to its death, while the germ of consumption, that most widespread of all germ diseases, is allowed "to go scot free." The medical profession should take some decisive action. He thought the time was not far distant when the patient with tuberculosis would be isolated from the healthy.

THE PRESIDENT in his address gave greeting to those present and reminded them that they were responsible for the future of the Society. The meeting in Paris for the consideration of phthisis, he thought, was the most important medical event of the past year. At that meeting

it was shown that it was the opinion of most present that consumption was probably contagious. Health was a factor of political economy. Anything to prevent sickness or to alleviate it was an act of statesmanship. The State ought to enact laws to govern the sick and the healthy, so that disease would be reduced to its minimum. The prosperity of the country depends upon the common people, and our country is more dependent upon the health and character of its people than any other. Public health is public wealth. When a laborer is taken sick he becomes a burden to the community. He quoted statistics to prove that the loss to the country by sickness is about \$392,000,000 yearly, and when a pestilence sweeps the country the amount is vastly larger. Boards of Health are now appointed to prevent the spread of disease, and the amount of good they do can be seen by the results that have been obtained in so greatly reducing the number of cases of small-pox. The question of the future is how to prevent disease. This could not be solved by the busy practitioner in the sick-room, but must be done in the laboratory.

DR. G. H. JENKINS read a paper on the *Pollution of Sources of the Supply of Water and Ice.*

Chronic Pachymeningitis Interna was the title of a paper by Dr. J. F. Calef, and a paper on *Fractures* was read by Dr. C. B. Newton.

Philadelphia County Medical Society.

Stated Meeting, April 10, 1889.

THE PRESIDENT, W. W. KEEN, M.D., IN
THE CHAIR.

(Concluded from page 824.)

SPECIMENS EXHIBITED.

DR. J. PRICE: Mr. President, I have here a small group of ovarian cysts of mixed character, removed early. The patients were all sufferers. One had been under rest treatment for fourteen months. This one was removed by Dr. Müller, of Germantown. It is a typical example of a parovarian cyst with a large, healthy ovary and slight adhesions. There was a small cystoma of the other ovary. Most of these small cysts occurred in young women. This small dermoid I removed from a patient aged 19. The operation was done four months ago, and she is now pregnant at the second month.

This was a fibroid in the left broad ligament, which had evidently gravitated into this position, and was removed per vaginam.

I have here three specimens of typical extra-uterine pregnancy. This large one was almost of the size of a child's hand. This was a case of Dr. Bernardy's, in which he made a positive diag-

nosis. The placenta and membranes are inside. On the other side there was a hydrosalpinx. This demonstrates the theory of Mr. Tait in regard to the causation of tubal pregnancy, *i.e.*, desquamative salpingitis. In the second place the placenta is in position. All of those specimens have been examined under the microscope, and there is no question as to the diagnosis.

I do not wish to give complete histories of the patients from whom these specimens were removed. In many cases they are very similar. Most of them had been subjected to a great variety of treatment and torture, and had not been benefited. Some made narrow escapes from death. Some were pus tubes, unilateral, or bilateral, some recent, some long standing. In some of the latter it was difficult to say which was the tube and which was the ovary. In a few cases there was abscess of one or both ovaries. In a few cases there existed a small broad ligament cyst. Many of these tubes were enlarged, some being as large as the fundus of the uterus.

I have here a fresh tube removed by Dr. Hoffman. Here is a group of abscesses of the ovaries co-existing with pus tubes. In many of these there were several distinct abscess cavities. If tapping had been resorted to in these cases it would have been necessary to have tapped several cavities.

In this group I have six cases that refused operation from one to five years ago. We are often asked what becomes of the patients who refuse operations. Some die in the hospitals. These cases drifted around among other doctors, and finally returned for operation. Two cases in which I had urged operation, one four months ago, the other six months ago, came to me at midnight, stating that the temperature was 104° and the pulse 140, and requesting an immediate operation. In both I refused to operate until the following day, and both recovered from the operation.

We are often told that the fluid portion of the pus may be absorbed and the patient recover. This may be true in some few cases, but the matter still remains as a source of mischief. These pus tubes are not rarely the cause of psoas abscess. In one case, which I sent to the Pennsylvania Hospital, the psoas abscess was due primarily to pus tube and abscess of the left ovary—demonstrated post-mortem.

This is a very large dermoid. I had picked this case out for operation, five years ago, at that time there was a small tumor behind the uterus. After I saw her five years ago she conceived and bore a child, and suffered some post-puerperal trouble. The existence of a small tumor is unquestionably a common cause of post-puerperal trouble.

The patient from whom this tube was removed was very ill when I was asked to see her by Dr.

Hoffmann, two weeks before the operation. I found her leaking copiously with a rapid thready pulse, and thought that she would die on the table if an operation were attempted. Under treatment her condition was somewhat improved, and the operation performed. I shall open this tube before you. It contains a fluid that looks like pus. This tube contains several sacs. This is an interesting point in connection with the Martin method of dealing with pus tubes by tapping. A single tapping would not reach all of the sacs.

DR. JOSEPH HOFFMAN: I have a word to say in regard to diagnosis in connection with my own specimen. I first saw the patient six weeks ago. She had been under the observation of a gentleman who thought she was pregnant. I found trouble on the right side, but did not discover that on the left side as I did not look for it. I considered the mass on the right side either a complication of the bowel, a pus-tube, or extra-uterine pregnancy. It turned out to be a pus-tube. In the course of a few days the patient developed symptoms of typhoid fever. Previous to this there had been no symptoms of fever and no other symptoms, with the exception of pain in the pelvis. She was suddenly seized with nose-bleed, high fever, and for several days the temperature followed the ordinary course of that of typhoid fever. It was this that placed her in the condition in which Dr. Price found her. The strange point is, that up to this time the woman had never had fever, nor any of the ordinary signs of pus. Nor had there been symptoms of peritonitis. The woman was in a very bad condition at the time of the operation. After the operation the temperature was below normal and she was covered with a cold sweat. She was only kept up by the careful application of heat. During the six days following the operation the highest temperature was 102.4. To-day, the tenth day, it is 98.8. There was universal peritonitis. The omentum was adherent, and no attempt was made to loosen it. This case shows that the statement that the peritonitis from such a cause is local, and not general, is nonsense. The only symptom that I dislike is a small discharge of pus from the drainage tube.

DR. M. PRICE: Large ligatures are useless. The smaller the ligature that will do the work the better. The ligature shown by Dr. Penrose is too large. In my case of removal of the kidney I applied two ligatures, one large and the other small. The large one worked through the back three months after the operation, and there was absolutely no change in it. I believe that in intra-peritoneal operations large ligatures are dangerous.

DR. C. B. PENROSE: The first specimen is a very unusual specimen of a fibroid uterus which has undergone cystic degeneration. I removed it

this morning by abdominal section. There was in the upper part of the tumor a cyst containing three quarts of fluid. This was tapped before the tumor was extracted. In all, five quarts of fluid were contained in the tumor, and the sense of fluctuation was as great as in an ovarian cyst. The cavity of the uterus would hold a quart of fluid, and is separated from the cysts throughout the tumor only by a membrane as thin as peritoneum.

The next specimen is an unusually large hydrosalpinx removed from a woman twenty-five years of age. It contained ten ounces of straw-colored fluid. The cyst wall was thin and transparent.

The third specimen is a hæmato-salpinx removed from a woman aged fifty-three years, with fibroid of the uterus of the size of a child's head. This case illustrates the fact that in many cases of uterine fibroid there exists disease of the tubes and ovaries. This has an important bearing upon the method of treatment employed in these cases. The removal of the ovaries not only stops bleeding and causes shrinkage, but it also takes away diseased and dangerous structures; a result not possible to obtain by means of drugs or electricity.

I have here a ligature removed from a woman who had suffered for twelve months from a sinus and faecal fistula which had followed operation for pyosalpinx, in one of the hospitals of this city. The sinus involved a drainage tube tract. When I operated much of the small intestine was found adherent in the pelvis and at the bottom of the fistulous tract, lying on the sigmoid was this ligature, in immediate contact with the opening into the bowel. This was undoubtedly the cause of the sinus and the fecal fistula. The ligature is unnecessarily thick, and the knots would be likely to render it irritating. The wall of the fistulous tract, as you can see, was formed of well-organized lymph.

The case shows the danger of permitting a drainage tube sinus to run too long without surgical interference. In this case there was, for the first few months, only a purulent discharge, but the walls of the bowel finally became destroyed, and a fecal fistula resulted.

Allegheny County Medical Society.

Special Meeting, March 19, 1889.

WM. F. KNOX, M. D., PRESIDENT, IN THE CHAIR.

DR. DUFF: Two months ago I reported a case of rheumatism, or rather a case of rheumatism associated with eruptions around the joints; at the time I did not understand the case, and could not say what the outcome would be. The rash

was first papillary, then vesicular, following up in the order of the joints attacked. A few days after, I found several large blebs over the shoulder, just such as we have arise after the application of cantharides plaster. As they dried up, the submaxillary glands and cervical glands began to enlarge and continued until suppuration occurred, and discharged large amounts of pus. After suppuration occurred, the young lady improved rapidly. I am still at a loss to account for the condition, and promised that I would give the result of the case.

DR. PAINTER reported a case of

CONGENITAL MALFORMATION OF THE SOFT PALATE.

Mrs. F., æt. 40, a widow eight years, consulted me on account of hoarseness following a cold. Inspecting the pharynx, I found an unique anatomical relation existing between the upper part of the pharynx and the soft palate, of which the patient was ignorant. The free border of the soft palate and the palato-pharyngeus muscle on either side are carried backward and attached to the posterior wall of the pharynx, forming a diaphragm between the superior and middle divisions of the pharynx. In this dividing membrane there are two somewhat circular openings—one one-half inch, and the other one-eighth inch in diameter. These openings are in the median line. The uvula cannot be distinguished. The patient can give no reason for this marked departure from the normal construction, and was ignorant of any irregularity till I asked her to permit a demonstration of her throat to this Society. She supports a family of five by washing. She frequently has a cold in the head, but experiences no difficulty in clearing the nose. She has never had noises in the ears and hears well. The sense of smell and taste are unimpaired, and her voice, save an occasional hoarseness, has never changed. The voice might be described as muffled. Her sleep is undisturbed. At least two of her children have throats normal in construction. She has had typhoid fever, and believes she had diphtheria when a child. As I demonstrate the case, it will be observed that she is well developed generally and in good health. In the absence of any ulcerative process, I conclude the case to be one of congenital malformation. The case has two interesting points, viz: First, this malformation is uncommon; and, secondly, the absence of symptoms such as one would think should follow such abnormality.

DR. HUSELTON reported a case of

COMPOUND PUNCTURED FRACTURE OF THE SKULL, produced by the calk of a horse's shoe. John T., æt 38, a farmer, was brought into the Allegheny General Hospital on the evening of January 26th with a history of "fractured skull." He was conscious, talked rationally, pupils equal,

no paralysis, and a full, slow pulse. The history, as given by himself, is as follows: He was riding in a "buckboard," leading a spirited horse by means of an ordinary halter. The horse, becoming frightened at a passing railway train, jumped upon the "buckboard," knocking the patient to the ground. He tried to rise, still holding the strap, when the horse reared and came down, his hoof striking the patient on the head, rendering him unconscious. He did not regain consciousness for about one hour after the injury, when he walked into the hospital supported by a friend.

An examination revealed a depressed, punctured fracture of the skull, situated in the frontal bone, two inches above the right eye. The fracture was shaped like, and about the size of a large almond, and very much depressed. A sero-sanguinolent fluid, supposed to be subarachnoid, escaped from the wound, but we were unable to find an opening in the dura mater. This fluid flowed freely as long as the head was resting on the occiput, but on turning it to either side it ceased. I trephined, removing the button from the lower portion of the wound. A number of fragments, principally from the inner table, were removed and the depressed bone elevated into position. There was no hemorrhage from the interior. The wound was flushed with a solution of bichloride mercury (1:4000). A few strands of silk were placed in the opening and brought out at the lower portion of the wound for drainage. The edges were brought together by silk sutures, and the operation completed by an antiseptic dressing. On the morning of the 27th his temperature was 100.4°, but gradually and continually dropped to 98.4° on the 29th, and remained normal from this time on. The dressings were removed on the 30th, four days after the operation. The wound had closed by primary union, and without a drop of pus or discharge of any character. The stitches and silk for drainage were removed on this occasion, and the head was redressed, observing the same antiseptic precautions as at first. These dressings were removed on February 4th; and as every part of the original injury was healed, an ordinary nightcap bandage was applied and the patient was permitted to get up on the next day, February 5th.

The case progressed without an untoward symptom of any kind. The patient was anxious to go home on the tenth day after the operation, but was kept in the hospital as a precautionary measure until February 15, when he was discharged cured, and the opening in the skull was apparently being rapidly closed by a bony deposit. His treatment was practically nil. The diet was liquid for the first few days. A mercurial at the outset was all he had in the way of medication.

DR. BUCHANAN: I would like to say a few

words on the subject of trephining. I think that Dr. Huselton had very distinct indications for his operation, and it certainly was very successful. I think there are one or two points on the subject of trephining that may be dwelt upon. The principal one is that the indications for trephining have entirely changed in the last few years. Formerly, there was a very great difference made between simple and compound fractures. Compound fractures were recommended to be trephined that would not have been considered proper subjects for trephining had they been simple. The presence of a simple depressed fracture, if the depression is slight, it is impossible to make out. A case of depressed fracture occurred in my practice a week ago, in which it would have been impossible for any one to make out the depression by external examination. On the following evening, when symptoms of compression came on, I opened the scalp and found the depression, removed a button of bone, elevated it, removed a clot of blood from beneath the bone, and put on a dressing. The patient afterward had no elevation of temperature, commenced to improve immediately, and is now practically well. The second point that I would call attention to is that the secondary results of depressed fractures are very much better appreciated now than heretofore. The deficiencies in intellect and epilepsies justify more frequent resort to the trephine and elevator in simple fractures of the skull. A case may recover and pass outside of the surgeon's sight, but still be a bad result; six months, a year, or several years after, there may be a chronic inflammation of the membranes of the brain or some damage done to the brain by plastic effusion, which will result in epilepsy or other troubles. I would therefore think that Dr. Huselton, even if there had been no compound nature in this fracture, would have been perfectly justified in elevating it, and I would go even so far as to say that when a fracture of the skull is suspected, if there is even a suspicion of depression, an exploratory operation through the scalp should be undertaken, because if there is no depression, such an operation would not hurt the patient a particle, and if there is a depression, it is exceedingly important to know it and act accordingly.

DR. MUNN: In connection with Dr. Buchanan's remarks on trephining depressed fractures, I will take the opportunity to relate a case which I met in my practice a year ago in April. A man was thrown out of a wagon by a runaway horse, and on being picked up a depressed fracture was discovered on the upper posterior corner of the right parietal bone. He was taken to his home, and there the propriety of an operation was spoken of, but it was declined by the friends of the patient. He passed out of my hands, went under the care of a homeopathic physician, and eventually recovered after remaining unconscious

for seven days; he had hemorrhage from the nose and the ear. Now, after the lapse of eleven months, he presents a decidedly marked depression in the region of the injury, has double vision, slight paralysis of the right arm, slight paralysis of the right leg, has some aphasia, and a slight paralysis of the left side of the trunk. I think the case to-day presents every indication for operation, but the operation was not performed at the time it should have been. Since the injury, he has had two epileptic seizures, nothing of the kind ever having occurred to him before.

DR. HUSELTON: I endorse everything that has been said by Dr. Buchanan and Dr. Munn. I would also add, I think we are too apt to overlook the importance of a fracture of the skull; under modern antiseptic treatment, I think trephining a comparatively safe operation, and in every case I think that where there is reason to suspect a depressed fracture of the skull, the trephine is a proper precautionary measure to be resorted to.

DR. W. P. MUNN presented a specimen, obtained from a cadaver of unknown history, of

ENTIRE ABSENCE OF THE INNOMINATE ARTERY.

At its place of origin the two common carotids arise together, then the left subclavian is given off, and last arises the right subclavian, which passes toward the right, behind the three other vessels.

DR. BUCHANAN: I have a former patient present whom I wish to exhibit. His case I reported to the Society three or four months since. He is a man whose patella I wired. I have not before been able to present him to the Society; I wished to present him at that time, but as I explained, he got out of my reach. I met him on the street sometime ago, and found that he had a very good result, and I thought I would show him to the Society. He was away from his laboring work just eight weeks.

(Patient exhibited.) You will observe that there is no separation whatever to be discovered between the fragments, and the joint movements are perfect. The limb is, to all appearances, as good as its mate.

DR. MURDOCH: Dr. Buchanan is to be congratulated on the result of this case. So far as can be told by an examination of this man's leg, the union is perfect; there seems to be a bony union between the fragments. I say seems to be, because I do not believe it is so; I very much doubt if bony union ever takes place in a fracture of the patella owing to the fact that many specimens have been thought to be bony, but when examined after death and the bones subjected to a process of boiling, it has been found the union was only fibrous after all. But if it is fibrous, it is just as good as if it were bony and just as useful, because there is no separation of the frag-

ments, and by scarcely any other treatment could the two fragments be brought into such close apposition; but anybody who knows the difficulty of treating fracture of the patella knows how difficult it is to keep them in apposition, and that if they are not kept so, the patient is maimed for life. The only objection to this operation that can be raised is the danger of it, but under antiseptic precautions, where they are thoroughly carried out, it is probable that the danger will be but little; but it is a melancholy fact that, notwithstanding the perfection to which antiseptic dressings and surgery have been brought, this operation, even in the hands of the best surgeons, is frequently disastrous, that is the cutting down on the knee-joint, freshening the edges of the bony surface and wiring them together. When I was in New York a year ago last spring, Dr. Sands told me of two cases that he had known where the patient had suffered amputation and had eventually died, where this operation was attempted; and only about a month ago, Dr. Stimson, at a meeting of the Academy of Medicine, in New York, stated that, during the past summer he had known three cases where an operation had been done in New York, and the patients had in all three cases suffered amputation afterward, so that even in the hands of the best surgeons, and with the greatest care taken, it is a dangerous operation, and surgeons have been endeavoring to find one that is less dangerous, that will accomplish the desired result; whether they will succeed or not remains to be seen. About three or four weeks ago Dr. Stimson, after making the remarks I have stated, exhibited five cases where he had tied the patella together subcutaneously, and the procedure seemed to me so simple and so likely to be successful that I think it should be tried, and if it succeeds, it will be much simpler than this operation, and, I believe, safer. The operation is so simple, that I will just show it here on the blackboard, if I can. (Drawing made by the doctor on the blackboard, exhibiting the method of operating.) I tried this last Saturday on an old lady, 60 years of age. I am not able to do what Dr. Buchanan has done, bring my patient here, and perhaps I never shall be able to do so. The patient is perfectly comfortable, and so far as anybody can tell, after this short treatment, bids fair to have a good result. I do not bring this up to criticise Dr. Buchanan. I am very glad to have had an opportunity to see Dr. Buchanan's case, the first one, I believe, that has been operated on in our county.

DR. HUSELTON: I want to congratulate Dr. Buchanan on the successful issue of his case. I had the pleasure of being present when he operated, and am glad to say that I think the operation was very carefully and skilfully performed. At the same time, I do not believe the operation will ever become a popular one; I think that op-

ening so large a joint as the knee-joint is too hazardous, and attended with too much danger, particularly when we are having very good results by the old method. I have had several cases, at least three or four in my practice, the last one occurring about two years ago, treated by the old method, and the result every thing that could be desired. I did claim the union was bony; however, I think this is not the case, but if ligamentous or fibrous, it is almost impossible to detect the fact. I exhibited the case to at least one person here, and would be glad to present the case to the Society at some future time for their inspection.

DR. BUCHANAN: I am very glad Dr. Murdoch presented this new method of treatment. I considered that method shortly after I had done this operation. It was then first brought to my notice. It occurred to me that this certainly is a much safer operation than the open method, but it is open to two theoretical objections, whether they are real objections, time alone will tell. The first is that it will probably in a great many cases, if not the majority, be impossible to approximate the fragments exactly by this method. I should think that the anterior borders of the patella, by this method, would be tilted a little backward, and that would keep the surfaces from coming together. In wiring a bone, it is sometimes a difficult matter to get the surfaces exactly apposed, even when you have everything open before you and are able to handle the parts, and of course it is very much more difficult when you are doing it subcutaneously. And the second objection that I would suppose to exist in regard to this method is, that the torn fragments of the capsule of the joint float in between the fragments. I believe it has been proposed to pass a needle in and hook these out from between the fragments. At all events I should imagine from the case of this man, at least, that it would be very difficult to get these shreds from between the broken bones, and it is said by a number of good surgeons (Prof. Macewen was the first, I believe, to state it), that this is a chief cause of non-union, or rather of the failure of bony union in this fracture. In regard to Dr. Huselton's results, I think he is to be congratulated. I don't think that the result which he has mentioned is otherwise than exceptional in these cases by the non-operative methods of treatment.

AMERICAN CLIMATOLOGICAL ASSOCIATION.—The Sixth Annual Meeting of this Association will be held in the Boston Medical Library Association Hall, 17 Boylston Place, Boston, on June 24 and 25, under the presidency of Dr. Vincent Y. Bowditch, of Boston. The programme contains a large number of papers by eminent physicians.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

Dr. Worms on Diabetes—Prof. Ollier on the Advantages of the Resection of the Hip-joint in Cases of Suppurative Coxalgia—Dr. Larat on the Treatment of Intestinal Occlusion by Electricity—Dr. Gaucher, of Algiers, on Abortive Treatment for Whitlow—Some Hints on Prescribing Hydrochlorate of Cocaine.

Dr. Worms lately read a note at the Academy of Medicine in which he communicated the result of his long and patient researches on diabetes in a clinical and therapeutic point of view. According to the author diabetes is very often a malady of slow evolution and of long duration. He thinks that none of the existing theories on the pathogeny of diabetes is satisfactory. Moreover, many of the symptoms, such as polyuria, emaciation, thirst, dental caries, which are looked upon as essential symptoms, are often found wanting. In a clinical point of view, the toxic or accidental glycosurias being put aside, the distinction between chronic glycosuria and diabetes mellitus is not justified. As regards the treatment the principal object of the physician should be to maintain in the highest degree the vital energy and integrity of the digestive functions. This result is obtained by the application of the diet and regimen instituted by Bouchardat. Dr. Worms thinks, however, that the gluten bread may be suppressed, and that the patient be allowed to eat ordinary bread in small quantity. Saccharin, which has been proposed as a substitute for sugar for the use of diabetic subjects, appeared to Dr. Worms to cause disgust after a time and to act injuriously on the digestive functions, which it is of the highest importance to preserve intact. As regards drugs, it is the sulphate of quinine in doses of from 20 to 30 centigrams which gave the best results. He does not consider it as a specific, but as a powerful neurosthenic which fulfils one of the principal indications of treatment. In certain cases he employed arsenic and opium with good results. Antipyrin is of too recent introduction in the therapeutics of diabetes to give a decided opinion as to its merits. As for bromide of potassium, which has also been much vaunted, it gave unfavorable results. Dr. Worms founded his observations on 41 patients whom he had been able to follow for some time and some of them are already cured.

At the same meeting of the Academy, Professor Ollier, of Lyons, read a note on *The Advantages of the Resection of the Hip-joint in Cases of Suppurative Coxalgia*. He stated that since 1860 he practiced this operation about fifty times. It was the sub-periostic method that he had employed. After the operation he endeavored to obtain ankylosis

of the joint. He considers that when the femur is ankylosed in a favorable position, with a slight flexion, the operated subjects may go through the hardest work and become indefatigable walkers. Once the ankylosis is established, there is no more fear of secondary displacements, nor the return of tuberculous or inflammatory foci. M. Ollier concluded his note by recommending that in the great majority of the cases of suppurative coxalgia ankylosis should be obtained. However, articular mobility may be preserved when early resection is practiced, that is to say as soon as an abscess around the articulation is suspected or established, because then the extent of the lesions of the soft parts being reduced to the minimum, a very complete reparation may be expected. Nevertheless, M. Ollier does not always approve of this manner of proceeding, as in many cases of suppurative coxalgia in childhood cures may be obtained by more simple operations than resection, such as antiseptic opening of foci, iodoform injections, drainage, etc.

In a very interesting note on *The Treatment of Intestinal Occlusion by Electricity*, Dr. Larat begins by observing how often the diagnosis of the cause of intestinal occlusion is difficult. Nearly always, one is in the presence of a tympanitic intestine, preventing all palpation. He points out also the complete uselessness of purgatives when the intestine is impermeable. In such cases, repeated purgations serve only to excite vomiting. When relief of the bowel is obtained by electrization it presents different forms; sometimes it is sudden, gaseous and stercoral, sometimes it takes place slowly, occupying several days. One sitting alone of electrization is often powerless to obtain it. On an average, four or five sittings are necessary to obtain the desired result. Of nineteen cases reported to the Academy of Medicine, the author cited six successes. In conclusion, he believes himself justified in deducing from these facts that intestinal galvanic electrization deserves to be employed in all cases of occlusion, as soon as the medical means have failed, and when the obstacle is evidently insurmountable by purgatives, on which one should not insist too much.

Dr. Gaucher, of Algiers, recommends the following abortive treatment for whitlow. He says it is sufficient to moisten slightly the painful part and a little around it with some water, and to pass over this surface a stick of nitrate of silver. A few hours after the skin becomes black, all pain disappears, and the inflammation is arrested. The blackened epidermis receives no dressing and in six days the black color disappears. The author was induced to try this remedy in a case of a fit of gout. The patient had his great toe swollen at its base, it was painful to the touch, a little red, and the seat of lancinating pains which hindered the rest of the patient. The painful articulation was moistened and rubbed over with a stick of

the nitrate of silver. The next day the joint had diminished in size and was covered over with a black skin. The pain completely disappeared a quarter of an hour after the painting, and the patient got up to follow his occupations.

The hydrochlorate of cocaine is so much in vogue that a writer in the *Formulaire Mensuel* thought it necessary to remind his readers that when this drug is prescribed associated with energetic bases or their salts, cocaine is precipitated. Thus, in a gargle containing borax or a mixture containing lime water, precipitates are produced not only with cocaine, but also with a large number of vegetable salts. The practitioner will therefore direct to be written on the label, "shake each time." Without this precaution the first doses of the medicament may be inefficacious, and the last, on the contrary, much more active. A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

American Academy of Medicine—Dr. W. Gilman Thompson's Paper on the Therapeutic Value of Oxygen.

At the last meeting of the Academy of Medicine Dr. W. Gilman Thompson read a paper on *The Therapeutic Value of Oxygen*, and in connection with it gave a demonstration of the effects of high pressures of oxygen upon animals. The first question he took up was whether an increased pressure really caused more oxygen to be absorbed by the system. Under any circumstances, he said, the hæmoglobin of the blood could take up but a very limited amount of oxygen, and the same was true of the blood-plasma. He pointed out the incorrectness of the old idea that animals could not live in pure oxygen, the system being burned up, as it were, by the increased tissue changes excited by it, and referred to the experiments of Dr. Andrew H. Smith in 1869 and 1870 in proof of this. His conclusion was that very little additional oxygen could be made to enter the system by any amount of pressure that would not be injurious.

He then exhibited the apparatus which he had constructed for the purpose of exposing animals to high pressures of oxygen. It consisted of a strong iron cylindrical chamber, with glass-covered openings at each end, in which the animal to be experimented upon was placed, and to this chamber oxygen was supplied at any degree of pressure desired from a cylinder containing the gas at a pressure of 225 lbs. to the square inch. Two animals, a monkey and a pigeon, which had been subjected for one hour to a pressure of 30 lbs. to the square inch of oxygen, in addition to

the ordinary pressure of the atmosphere, 15 lbs., were taken from the chamber in an apparently perfectly normal condition.

Dr. Thompson next proceeded to report with more or less detail a series of experiments he had made upon healthy animals; these being dogs, cats, pigs, monkeys, guinea-pigs, pigeons and alligators. It was found that all the animals could exist comfortably in the oxygen until a pressure exceeding thin atmospheres was reached. The higher the order of the animal experimented upon the more quickly it became affected. As a rule, a decided fall of temperature, often amounting to from 4° to 6° F., was observed; and only in cold-blooded animals was there any rise of temperature. Similar results had been reported by Valenzuela in a paper read before the Royal Academy of Madrid. This marked decrease he did not believe was to be attributed at all to the effect of the oxygen, but to the profound disturbances caused in the system by the high pressure employed. If, as was claimed by the older writers, a greatly increased tissue metamorphosis was caused by oxygen, this would unquestionably be accompanied by an increase, and not a diminution, of the body temperature. In such of the animals as died or were killed after being subjected to high pressure of oxygen he found pulmonary engorgement and dilatation of the right heart. The convulsions which usually resulted when the pressure was carried to a high point were, as a rule, quickly controlled by blowing off 5 lbs. of pressure. The cause of these convulsions, he said, was as yet undecided, but he was inclined to attribute it to the effect of the unequal diffusion of gases under different degrees of pressure. He also tried the experiment of subjecting animals on alternate days to high pressure of oxygen and to compressed air.

A second series of experiments was made upon animals in which abnormal respiration had been induced. Dyspnœa, he said, might be classified as being due to

1. Abnormal conditions of the air.
2. Abnormal conditions of the blood.
3. Obstructed circulation.
4. Diminished surface for aeration.
5. Neurotic influences.

In a cat in which dyspnœa was produced by cutting both vagi instant relief was afforded by exposing the animal to oxygen; while, on the other hand, the dyspnœa was increased by compressed air. In the second experiment a canula was introduced into the pleura of a dog. In the third pulmonary congestion was caused in a cat by injecting a solution of nitrate of silver into the lung tissue, and the dyspnœa resulting therefrom was greatly relieved by oxygen. In other experiments the lung was compressed by injecting considerable quantities of water into the pleura, and in still others the animals were bled to

the extent of many ounces. The results of these experiments, he said, went to show that oxygen does aid in a moderate degree certain types of dyspnœa.

In considering the therapeutic value of this agent Dr. Thompson stated that it had been employed, first, as curative in certain general diseases, more particularly of the blood and circulation; and, second, as a palliative in dyspnœa due to various causes. Of late its use had increased to such an extent that two or three hundred thousand gallons of the gas were now annually consumed in New York City alone. Among the other troubles, beside dyspnœa, in which it was claimed that it had proved of benefit, were anæmia, chlorosis, croup, chronic gastric catarrh, migraine, cholera, and opium poisoning. In anæmia, chlorosis, etc., he said he could see but little advantage over good fresh air in giving inhalations of diluted oxygen two or three times a day, as was the usual practice in such affections. It did not seem rational to him to expect that sufficient oxygen could enter the system under these circumstances to produce anything but a temporary effect at the best. In cases of blood poisoning, again, he had failed to see any benefit derived from oxygen. In certain subjective cases of dyspnœa it no doubt gave relief, but in a case of poisoning by illuminating gas which he had seen at the Presbyterian Hospital its administration was kept up for nearly three days without producing any effect either on the rate of respiration or on the cyanosis present. In cardiac diseases his experience with it had not been encouraging, and he referred particularly to a case of malignant endocarditis in which it proved of no avail in relieving the dyspnœa. In certain cases of asthma and of uræmic dyspnœa, however, it gave decided relief, and in such he believed it was an invaluable therapeutic agent; though not, of course, curative.

In the discussion on the paper Dr. J. West Roosevelt spoke of the relation of the amount of oxygen inhaled to that absorbed, and said that while the amount which entered the plasma or the hæmoglobin of the blood was comparatively small, he believed it was sufficient to cause appreciable results in many instances. As to the therapeutic value of oxygen, in the neurotic form of dyspnœa we had a condition in which the mere act of inhalation and the engaging of the attention of the patient would often have a beneficial effect. In anæmia he had met with fairly good results with oxygen, though the patients improved less rapidly than under the use of iron. If in any case the hæmoglobin was not saturated an improvement showed that more oxygen was carried than under ordinary circumstances. On the whole, oxygen had proved of considerable value in his experience, and in cases of diminished surface for aeration he had seen cyanosis decidedly improved under its use.

Dr. George L. Peabody was the most skeptical of any of the speakers in regard to the efficacy of oxygen. So many circumstances were involved, he said, in estimating the value of an agent like this, that it was difficult to arrive at positive conclusions respecting it. Thus, when it was not the only therapeutic agent employed it was impossible to say just how much benefit was derived from it; and this difficulty was further increased in diseases which naturally tend to recovery. From all that he could make out from reading and clinical observation there seemed to him good reason to doubt the alleged efficiency of oxygen, and personally he believed that, as a rule, quite as much relief could be obtained from ordinary fresh air. It might be tried, however, in maladies attended with dyspnœa in which the blood is unchanged, such as pneumonia, emphysema, croup, and asphyxia from noxious gases; although, as Dr. Thompson had stated, in poisoning by illuminating gas it had failed to give relief. There was no justification, he thought, for the extensive use of oxygen in such diseases as anæmia, chlorosis, lithæmia, etc. Its absorption depended, probably, on the amount of hæmoglobin in the blood at the time the oxygen was administered; but in any event the amount absorbed was unquestionably very small. Although the pulmonary gymnastics of the inhalations might have a beneficial effect in certain instances, there were other remedies which could be employed with much greater advantage. That the use of oxygen hastened recovery in such cases he could not believe, and the recognized facts of physiology were certainly at variance with any such conclusion.

Dr. Beverley Robinson, on the other hand, was a most enthusiastic believer in the practical utility of the remedy. He said that he differed entirely from Dr. Peabody, and that his clinical experience afforded the most conclusive proof of the immediate and marked relief resulting in many conditions from the use of pure oxygen. The purity of the gas he considered a point of very great importance, and he said that one make of gas which he had formerly employed gave such poor results that he abandoned its use. There was a gas now manufactured in New York which was said to contain a certain proportion of nitrogen monoxide, from which he had obtained very satisfactory results, and it was worthy of note that Brown-Séquard had expressed his opinion that nitrogen was of great service in preventing the irritating and intensely exciting effects of oxygen alone.

In anæmia he had found that those cases were most improved in which oxygen was used in connection with iron. In albuminuria connected with atrophic nephritis he had found the general nutrition of the patient improved under the use of oxygen; the digestive and assimilative powers

being greatly assisted by it. Even in phthisis, while it did not have a curative effect, it might prove beneficial. In the first place, the inhalations caused the patient to thoroughly expand his lungs; secondly, oxygen was itself an antiseptic; and thirdly, it had the effect of improving the general nutrition. As had been well said, oxygen was really prescribed every time that a patient was sent to the mountains, to Southern California, to the plains, or on a sea voyage. That there were many cases in which it was impossible to send patients away, and he believed it was possible to stimulate the hæmoglobin in the blood, and thus to enable the patient who remained at home to carry more oxygen. In the use of oxygen he did not think we should be guided so much by experimental researches as by practical clinical experiences. Leaving out of consideration those cases in which he believed it had a decidedly curative effect, there were certainly many others in which the last hours of patients could be rendered much more comfortable by resorting to the use of oxygen.

Dr. Walter Mendelson took much the same view of the subject as Dr. Peabody. While it was true that in anæmia he had some quite marked results under the use of oxygen, he did not believe that the benefit noticed was in reality due to this agent. In this connection he cited the case of an old man who inhaled ten gallons of oxygen a day, and became greatly improved. This improvement, however, he was convinced was due to the systematic expansion of the lungs and to the moral effect of the knowledge that something out of the common was being done for him. In cases of dyspnœa from various causes he had seen more or less relief afforded by oxygen, yet all the patients died. Still, as Dr. Robinson had remarked, it was possible that their last moments were rendered more comfortable by the inhalations.

Dr. M. P. Jacobi said that the amount of oxygen which the hæmoglobin carries varies under different circumstances. In asphyxia of various kinds the physiological capacity of the blood remained the same, and therefore the indication was to administer oxygen. The correctness of this had also been shown by clinical experience. In anæmia, and especially chloro-anæmia, on the other hand, the hæmoglobin was diminished. The condition was precisely the reverse from that met with in asphyxia, and we could not cause a much greater amount of oxygen to be absorbed.

Dr. Andrew H. Smith said he was gratified to find that the work which he did twenty years ago for the most part still remained good. At that time he had demonstrated that animals could live perfectly well for four days in pure oxygen; care being taken to remove the effete products of respiration. It was his opinion that under ordinary circumstances the blood is not fully saturated with oxygen, and that the point of saturation

corresponds with the physical demand. This allowed a pretty wide margin, and it was perhaps within this margin that a considerable amount of oxygen could be absorbed by the blood. Thus the demand for oxygen was much greater in athletes engaged in violent exercise than in individuals making but little physical exertion. Therapeutically, he had seen the greatest benefit derived from oxygen in catarrhal conditions of the air-passages, such as was met with in suffocative bronchitis. In such cases he was at a loss how to explain the relief afforded by the oxygen, unless it was a fact that under these conditions the blood did not take up as much oxygen as the system required. Dr. Smith also said he had used oxygen with satisfactory results in opium poisoning.

In closing the discussion Dr. Thompson said that convulsions were produced in the animals experimented on by the rapid increase of the pressure, and that such convulsions were quickly relieved by the rapid withdrawal of a portion of the pressure. He could not agree with Dr. Smith in his opinion regarding the saturation of the blood with oxygen, since he thought there could be no question that even under ordinary conditions the hæmoglobin was practically saturated with oxygen. He also believed that Dr. Robinson was unquestionably mistaken in attributing any irritating effects to oxygen. This was entirely disproved by his own and by Dr. Smith's experiments with animals; and it had been repeatedly demonstrated by others that pure oxygen has no irritating effects whatever. It produced no burning up of the tissues, as had been formerly supposed, and he could see no advantage over ordinary air in the nitrogen monoxide referred to.

During the evening a cat and a dog were successively subjected to progressively increasing pressures of oxygen in the pneumatic chamber. When the pressure reached 80 pounds to the square inch the cat was seized with a convulsion, and the dog had a convulsion when the pressure reached a little above 45 pounds. Both animals recovered after they were restored to the air.

P. B. P.

MISCELLANY.

THE 75,000 EDITION.—*The American Lancel* says: "On May 25th, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION issued an edition of 75,000 copies, thus reaching nearly all the physicians of the United States. It is hoped in this manner to interest more physicians in THE JOURNAL, and the American Medical Association. Especially is it hoped that it may attract a large number to the coming annual meeting at Newport. A pretty full preliminary notice of this meeting is given so that a fair idea may be had respecting it. Incidentally, it may be said that the edition fully pays for itself, without any reference to the regular subscribers, or the members of the Associ-

ation, so that any advantage that may accrue to either will be a clear gain."

The New York Medical Journal says: "THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.—An edition of 75,000 was recently printed, enough to enable our excellent contemporary to bring itself to the notice of almost every physician in the country."

The Weekly Medical Review says: "With commendable zeal the editors of THE JOURNAL have issued 75,000 extra copies to the medical profession. This copy contains a lengthy list of the titles of papers to be read at the coming meeting of the Association. THE JOURNAL also contains a concise description of 'Newport-by-the-Sea,' and the neighboring places of interest, illustrated by near a dozen elegant plates. These extra copies which have been mailed to the physicians throughout the country are well calculated to arouse a more universal interest in the coming meeting, which will be held June 25th to 28th. The prospects are that the meeting will be larger than any ever yet held by the Association. The extra number of THE JOURNAL also contains a number of valuable contributions to medical literature and a brief review of the history of the Association."

Dr. R. J. Dunglison, of Philadelphia, writes us: "I think the Extra Edition a great success."

Dr. A. L. Hummel, of Philadelphia, writes us: "Your Special is a beauty. Please send me two more copies."

The Medical Times and Register says: "THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION comes out on May 25, with an edition of 75,000 copies. THE JOURNAL gives evidence of careful and competent editorial supervision; and if it is now under a temporary management, the Association can scarcely do better than make the present arrangements permanent."

The College and Clinical Record says: "An extra edition of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 75,000 copies, was issued on May 25th. It is a very attractive number, and the enterprise and judgment displayed in both the publication and editorial departments reflects much credit upon those who carried the project to a successful execution. Certainly the great bulk of the medical profession will now be thoroughly informed as to the objects of the American Medical Association, the publication and merits of THE JOURNAL, and the practicability and desirability of medical men becoming members of the Association, which they can now do with facility, either by attendance as delegates or by direct application at any time, merely forwarding a certificate of good standing in their State or local Society, and five dollars, annual dues, to the Treasurer of the Association, Dr. R. J. Dunglison, Philadelphia. They receive THE JOURNAL for the year free."

The American Practitioner and News says: "THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION recently added 75,000 extra to its regular edition. We sincerely hope that the enterprise of its management may be rewarded by the return of 75,000 *bona fide* subscribers."

LETTERS RECEIVED.

Dr. Seneca D. Powell, New York; Dr. R. J. Dunglison, Philadelphia; Dr. Fred Treon, Crow Creek, Dak.; Dr. J. B. Murdoch, Pittsburgh; Trommer Extract of Malt Co., Fremont, O.; Dr. John M. Batten, Pittsburgh; Health Restorative Co., New York; Dr. H. Longstreet Taylor, Cincinnati; Dr. Austin Flint, New York; Dr. S. E. Chaillé, New Orleans; Dr. E. S. McKee, Cincinnati, O.; Dr. W. H. Daly, Pittsburgh; Dr. David Barron, Lexington, Ky.; Dr. N. P. Dandridge, Cincinnati; Dr. G. C. Savage, Nashville, Tenn.; Dr. E. Pynchon, Chicago; Dr. P. L. Brick, Le Mars, Ia.; B. B. Mitchell, Block Island, R. I.; Wells & Richardson Co., Burlington, Vt.; College of Physicians and Surgeons, Boston; Dr. E. E. Montgomery, Philadelphia; Thos. W. Leeming & Co., New York; Dr. G. W. Powell, Moriah, N. Y.; W. P. Cleary,

New York; Dr. T. J. Birch, Port Carlson, Pa.; Dr. John Specht, West Salem, Wis.; Dr. O. C. McDannell, Lowell, Mich.; Ohio Buggy Co., Columbus, O.; Dr. A. E. Owens, Dover, Ill.; Dr. Wm. H. Morrison, Holmesburg, Pa.; Dr. W. N. Miller, Pittsburgh; Dr. J. H. Goss, Fort Lamar, Ga.; Dr. W. A. Cooper, Dyersburg, Tenn.; Dr. A. L. Hummel, Philadelphia; J. H. Bates, New York; Dr. L. Duncan Bulkley, New York; Dr. H. v. Sweringen, Fort Wayne, Ind.; Dr. J. H. Ruggles, Creston, Ia.; J. P. Oleson, Dr. L. A. Kengla, San Francisco, Cal.; Dr. C. F. McGahan, Chattanooga, Tenn.; Dr. R. D. Clark, Akron, Ia.; Dr. R. H. Henry, Frankfort Station, Ill.; Dr. Thos. Taylor, Washington; Physicians' and Dentists' Insurance Association, Chicago; Dr. W. A. Jordan, Clinton, Ky.; Dr. H. C. Mooney, Laketon, Ind.; Nichols & Shepherd, Three Rivers, Mich.; Dr. H. R. Storer, Newport, R. I.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from June 1, 1889, to June 7, 1889.

Capt. Geo. F. Wilson, Asst. Surgeon U. S. Army, resignation was accepted by the President, and took effect May 31, 1889.

By direction of the acting Secretary of War, Capt. James C. Merrill, Asst. Surgeon, is detailed as a member of the board of medical officers appointed by par. 9, S. O. 108, May 10, 1889, from this office, to meet at the U. S. Military Academy, West Point, N. Y., on June 1, 1889, or as soon thereafter as necessary, to examine candidates for admission to the Academy, etc., vice Capt. Fred. C. Ainsworth, Asst. Surgeon, hereby relieved as a member of the board. Par. 4, S. O. 127, A. G. O., June 3, 1889.

Capt. W. O. Owen, Jr., Asst. Surgeon, leave of absence for seven days granted in Order 18, c. s., Ft. Gibson, I. T., is extended twenty-three days. Par. 2, S. O. 67, Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., May 29, 1889.

First Lieut. Jefferson R. Keen, Asst. Surgeon, leave of absence granted in S. O. 48, Dept. of the Platte, May 15, 1889, is extended fifteen days. Par. 3, S. O. 129, A. G. O., June 5, 1889.

APPOINTMENTS.

Philip G. Wales, appointed Asst. Surgeon, with rank of First Lieut., from June 7, 1889.

Theodore F. De Witt, appointed Asst. Surgeon, with rank of First Lieut., from June 7, 1889.

Benjamin L. Ten Eyck, appointed Asst. Surgeon, with rank of First Lieut., from June 7, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending June 8, 1889.

Asst. Surgeon J. J. Page (retired), granted one year's leave of absence to leave the United States.

Thos. B. Bailey, appointed an Asst. Surgeon in the Navy May 23, 1889.

George H. Barber, appointed an Asst. Surgeon in the Navy May 23, 1889.

George Rothganger, appointed an Asst. Surgeon in the Navy May 24, 1889.

George Tucker Smith, appointed an Asst. Surgeon in the Navy June 3, 1889.

Asst. Surgeon T. B. Bailey, ordered to the receiving ship "Dale," at Washington, D. C.

Asst. Surgeon Geo. H. Barber, ordered to the receiving ship "Vermont," at New York.

Asst. Surgeon F. N. Ogden, ordered to examination preliminary to promotion.

Asst. Surgeon P. H. Bryant, detached from Naval Hospital, Chelsea, and granted a month's leave of absence.

Medical Director H. O. Mayo (retired), granted one year's leave of absence, with permission to leave the United States.

THE

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, JUNE 22, 1889.

No. 25.

ORIGINAL ARTICLES.

PATHOLOGICAL SPECIMENS, WITH ACCOMPANYING HISTORIES.

*Presented before the Medical Society of the District of Columbia,
May 21, 1889.*

BY JOSEPH TABER JOHNSON, M.D.,
OF WASHINGTON, D. C.

[Reported for THE JOURNAL]

Case 1.—Ovaries and tubes from a white lady, æt. 34; no children, though she had been married fourteen years. History of pelvic pain and chronic invalidism for nearly twenty years. Had undergone much treatment by many physicians in different cities without benefit, and was now nearly worn out. Upon examination, found enlarged ovary on one side and an adherent mass on the other, such as usually passes for pelvic cellulitis. Dr. J. recommended immediate removal of diseased organs. Patient was delighted at a definite proposition to do something, and she entered his private hospital for that purpose. Appendages upon both sides removed; ovary upon right side was as large as his fist, and contained blood and pus. Appendages upon left were densely matted together and adherent to anything they touched. Recovery has been perfect. It is now a year since the operation, and Mrs. S. is in perfect health.

Case 2.—Mrs. D., æt. 32; white, wife of a clergyman; mother of seven children; had been an invalid for ten years; confined to her room for last three years, and to her bed for past year; sent to him by Dr. Stuart Harrison, of Anncostia. One ovary very much enlarged; condition very similar to Case No. 1. Same operation and same result; done in his private hospital. Returned six months later with pains in the rectum and pelvis; pelvic pains relieved by galvanic current. Dr. P. S. Wales, late Surgeon-General U. S. Navy, saw her with him, and discovered a fissure of the anus, which he completely cured by thoroughly dilating the sphincter under ether.

Case 3.—Enlarged tubes with ovaries, from a case of pyo-salpinx, in a single colored girl, æt. 28 years. Had been a great sufferer for some years; referred to Dr. J. by Dr. Mary Parsons. Operated in private room in Providence Hospital.

Rapid recovery, and continues well; gained thirty-five pounds in last six months.

Case 4.—Ovaries and tubes from Mrs. W., a widow, aged 36, who was suffering from a bleeding uterine myoma; had treated her three months with ergot and electricity without effect, except to tone up her system somewhat; was employed by the Government, but lost her place on account of continued absence; was unable to work, and had to be supported by friends. Operated last January. Patient is now well; has lost no blood since the removal of appendages in Providence Hospital.

Case 5.—Ovarian cyst nineteen pounds from Miss R., aged 23. White; single; sent by Dr. Chapman, of Glymont. Operated in his private hospital February 14, 1889, when her temperature was 103°, pulse 130°, and respiration 40°. Complete and immediate relief; no bad symptoms during recovery, except from slight stitch-hole abscesses; is now at home, and perfectly well.

Case 6.—Blood-clots, ovary and tube from Mrs. B., who was operated on for symptoms resembling extra-uterine pregnancy. Saw her first with Dr. Fry; patient suffered with constant pain and bloody discharge; had a mass in left iliac fossa, resembling a fibroid; pain and tenderness increasing, and evidence of pus developing. Dr. Fry had her removed to Dr. Johnson's Private Hospital, where she was operated on four months ago. A large abscess of left ovary was opened; a pint of very offensive pus was evacuated; cavity washed out and drained; drainage tube remained in two weeks, and gave exit to much offensive fluid. More than a handful of large, blackish blood-clots came out of the abdomen, and from their size and age were supposed by Dr. Johnson to be portions of placenta; but Dr. Gray, of the U. S. Medical Museum, reports them to be old coagula. Patient had been in bed eleven weeks when operated on. She now reports herself as perfectly well. The other ovary was not disturbed.

Case 7.—Two enlarged ovaries and tubes from Miss G.; white; æt. 23; single; has been a sufferer for ten years; was sent to him by Dr. Bayne, who had treated her for several years for menstrual epilepsy and painful periods. Had been under Dr. Johnson's care four years. He had fre-

quently urged her to have her appendages removed. They were known to be enlarged—in a state of chronic inflammation and adherent. After one of her attacks of convulsions, her bladder lost its power to contract, and for three years and five months her water was passed only through a catheter, which she finally used for herself. Under the frequent and prolonged use of the faradic current, she regained the power to empty her own bladder. Last fall she had a pelvic peritonitis, which kept her in bed over a month. The left ovary began to enlarge very rapidly, and kept her house-bound. She entered Dr. Johnson's Private Hospital in January, and was operated on. One ovary was as large as a child's head, and contained over a pint of offensive pus. The other was as large as a lemon. The patient made a slow recovery, and left the hospital in six weeks. Being septicæmic when operated on, she has done fairly well. She is now going about, and has gained at least twenty-five pounds, and expresses herself as being a new creature.

Case 8.—Large ovarian cyst, from a white married lady, æt. 61 years. Tumor had been growing less than a year. Patient had been confined to her room for a month with typhoid symptoms. Pulse about 100°, but temperature ranging from 100° to 103° every evening; tongue very brown and dry. Was removed from a boarding-house to Dr. Johnson's Private Hospital, and operated three days later. Third day after removal of tumor, symptoms all disappeared. She made an uneventful recovery, and left the hospital in five weeks. She is now perfectly well. Tumor weighed 26 pounds; was sent to Dr. J. by Dr. Gardner.

Case 9.—Supra-vaginal hysterectomy. Uterus, tubes and ovaries removed, with a fibroid tumor weighing four pounds. Saw the patient with Dr. Brownwell about three weeks ago, when she was suffering acutely with symptoms of intestinal obstruction. Dr. B. had attended her for a week, and had been unable to cause a movement of her bowels. Had been compelled to administer many hypodermic injections of morphia to quiet her agony. Her abdomen was enormously distended with gas; her temperature was about normal, but her pulse had been 120° for three days. Dr. Johnson had seen the patient over a year before in consultation with several physicians, in reference to the removal of a fibroid tumor of the uterus. The patient was anxious for an operation, but three out of five doctors were opposed to its removal, and a course of electrical treatment was recommended. This was continued for about four months without any marked benefit under the skilful management of Dr. McArdle. Patient had suffered in the meantime from attacks of indigestion. Upon a vaginal examination the fibroid was now found to be entirely filling the pelvis, and

Drs. Johnson and Brownwell thought the tumor was the cause of the intestinal obstruction, and that its immediate removal offered the only hope of her relief. Though there was great distention of the abdomen, constant vomiting, and a pulse of 120, yet with a temperature at about 99, it was thought that there was little or no peritonitis. The patient and her family were ready and anxious for an operation. It was decided on at noon, and done at 4 P.M. The only difficulties experienced in the operation were in keeping the distended intestines from escaping, and in getting the tumor out of the pelvis. It was finally drawn up with Tait's corkscrew pulling it, while two fingers in the vagina pushed it above the brim of the pelvis. There were no adhesions except to the sigmoid flexure, which was completely flattened out. Keath's clamp was applied at about the internal os, and the tumor cut away; pedicle treated externally, and the wound closed in the usual way. It was thought that the removal of the tumor would remove the obstruction, and no extensive search was made for any other trouble. Patient was very much more comfortable after the operation, and frequently expressed herself as being free from pain. Operation was done on Sunday. The difficulty was not relieved, and she died on Thursday of intestinal obstruction. The autopsy showed everything very satisfactory about the operation, but revealed a tight constriction of the colon at the point where the transverse merges into the descending colon, in which was a perforation large enough to admit the big end of a lead-pencil. Considerable intestinal contents had escaped. About six inches of the gut was removed, and with the tumor was presented to the Army Medical Museum. Upon examination, Dr. Billings reports the obstruction to be "cancer of the intestine." We have the sad consolation, therefore, of knowing that her life could not have been saved by any operation short of a resection of the intestine, and the malignant deposit was not discovered until the autopsy.

Case 10.—*Supra vaginal hysterectomy.* Soft, rapidly-growing myoma of the uterus, weighing 20 pounds, removed from Miss E.; white; æt. 31. First noticed an enlargement four years ago; had only been troublesome for about a year; was anxious to have it out. Operated in Providence Hospital. Many and very vascular adhesions about upper part of tumor, and to the omentum. Some of the vessels were as large as index finger. Koeberly's *serre neud* applied to pedicle, and treated as recommended by Bantock. Later: patient has made a good recovery; has a normal pulse and temperature; is now in her twenty-fourth day.

Case 11.—Tubes and ovaries from Miss B., æt. 24; white; a seamstress, who was prostrated on account of loss of blood from a bleeding uterine myoma the size of a large cocoanut. Had been in the Homeopathic Hospital off and on for about

three months; was entirely supported by kind friends. Operation had been a complete success. She has written him this week that she feels better and stronger and happier than at any time for a year past.

Case 12.—Cancer of the ovary, large as a child's head. Was operated on in Dr. Johnson's private hospital. Fluid collection in abdominal cavity, mistaken for a cyst. Upon disturbing the mass, it began to bleed, and the only way to arrest hæmorrhage was to ligate and remove it. Cavity irrigated with hot water, and drainage tube put in. Recovered from the operation, and went home in five weeks, probably to die soon from an extension of the cancerous disease.

Case 13.—Large ovary and part of tube removed from Mrs. S. two months ago; had been confined to bed two months previous to operation on account of agonizing attacks of pain. She gave the history of a miscarriage in the sixth week, and much of her sufferings and frequent bloody discharges from the uterus were attributed to her own bad management. It was supposed that the fœtus had escaped, and that portions of sedundines still remained. Upon examination, the uterus seemed to be enlarged, retroverted, and exquisitely tender. So much pain was given by pressure that several of the physicians who had attended her were unable to make a satisfactory examination. I saw her with Dr. J. R. Bromwell about ten weeks ago, and after learning the history and examining the patient as well as we could, were divided in opinion as to whether we had an enlarged uterus or an extra-uterine pregnancy to deal with. Her terrible attacks of pain and the bloody discharges from the uterus caused us to think the latter condition might be present. It was decided finally to etherize her—dilate the uterus and remove anything abnormal which we might find in the cavity. This was done a week later, and the uterus was found to be only slightly enlarged and entirely empty. Upon the left side, however, we found a mass the size of one's fist, which had been mistaken for the enlarged and retroverted fundus uteri. Its very great tenderness had prevented manipulation, and it was not until she was etherized that we could determine that the mass was not the uterus. Just exactly what it was no one could yet say, but it was believed to be an enlarged ovary with an enlarged tube on its upper surface. It might be extra-uterine pregnancy. While our diagnosis was not certain, our opinion was that this enlargement was the cause of all her trouble, and that it ought to come out. A week later the abdomen was opened and Dr. J. removed the left ovary, which was larger than a lemon. It was very black and very soft. In enucleating the ovary from its bed of attachments, half a pint of black blood-clots welled up into his hand, and were guided out of the cavity. The abdomen was thoroughly irrigated, a

drainage-tube put in, and the incision closed. The patient has made a good recovery. Am inclined now to think it was extra-uterine pregnancy, though Dr. Lamb says it is only blood-clots. Several of Mrs. S.'s family had died of cancer, and the fear of malignancy made the patient and her family more ready for an early operation. Mrs. S. vomited constantly for six days after the operation, and was only nourished through the rectum. This caused no pain and no rise in pulse or temperature. She has a good appetite and digestion. She has gone to Atlantic City for the summer.

ON THE DIAGNOSIS OF PREGNANCY IN THE EARLY MONTHS.

*Read before the Medical Society of the District of Columbia,
January 30, 1889.*

BY LLEWELLYN ELIOT, M.D.,
OF WASHINGTON, D. C.

In speaking of the diagnosis of pregnancy in the earlier months, I desire to state that I refer to the time previous to the appearance of the positive signs, or, in other words, previous to the fourth month. The subject is one of very great importance, both to the patient and to the medical man, for upon his decision will rest, in many cases, the domestic happiness of families, especially when considered with reference to the younger female members. An error in diagnosis can never be remedied, for it matters not whether we pronounce for or against pregnancy and the final outcome of the case be different from our prediction, the error will live long after the case has been forgotten by the physician. It is this possibility of injuring our reputation that makes the subject of so much greater importance and demands that medical men should be conversant with all the signs of pregnancy, presumptive, probable, and positive. When a married woman desires to know whether or not she is pregnant, she will freely confide her symptoms to her physician, knowing that this is the only way for him to form a positive opinion, even allowing the vaginal examination, but how different is it, as we all know, when a young woman has fallen from virtue, becomes pregnant and seeks treatment for a suppression of the menses and a nausea and sick stomach in the morning. In such a case there is frequently the greatest difficulty in forming a diagnosis, for she will deny all symptoms, she will admit nothing, and assume the rôle of injured innocence when closely interrogated as to her habits, protesting all the while that the suppression is but the result of exposure to the cold and wet; that she never was regular; that her appetite and digestion never were good; that she has backache, which is always a premonitory symptom with her of the approach of the menstrual period. Now what excuse could we

have for proposing an examination of the breasts, an inspection of the vagina for its discoloration, an examination of the cervix, an application of the thermometer, or an examination for Hegar's shortening of the neck, in a case of this kind? Our suspicions might make us anxious to apply any or all of these tests, but the patient would refuse to see the necessity of it and seek advice from some one who would not ask "impertinent questions." In a case like this the pulse rate is, in my opinion, the most reliable sign, for its application requires neither exposure nor vaginal examination, it is simple, and is a sign not generally known to women, and will guide us in our further disposition of the case.

Let us see what are the signs of pregnancy in the earlier months, previous to the positive signs of this condition, that is to say, previous to the end of the fourth month.

The first sign of pregnancy is the suppression of the catamenia, then follows a bilious attack, a disordered state of the stomach, with nausea and vomiting, vesical tenesmus and irritability, kysteine in the urine, salivation, changes in the mammæ, flattening of the abdomen, softening of the cervix uteri, depraved appetite with longings, violet discoloration of the mucous membrane of the vagina, and descent of the uterus.

We must remember that the probable and presumptive signs of pregnancy may or may not be the result of gestation; that they may be the effects of various morbid conditions of the uterus or other organs of the system, with which pregnancy has no connection, and that the positive signs are evidences of undoubted value.

In regard to the suppression of the menstrual discharge, suppression may result from other causes; newly-married women sometimes skip two or three months and then become regular, again it may not be suppressed at any time during the gestation. I have seen it occur three successive months after impregnation. The vomiting and nausea may follow from other causes. Depraved appetite and longings for various articles of diet are reliable signs. I have known cases in which enormous quantities of starch have been consumed by the patient. The breasts begin to change about the second month, the nipple becomes more sensitive, projects, swells, and assumes a darker color; the areola is completed about the fourth month.

Neuralgias, hysteria, syncope, a sensation of increased bodily heat, dizziness, change of disposition, headache, occasional rigors, pigmentation and swelling of the face, together with various nervous derangements, very frequently occur.

Kyesteine has been found as early as the fifteenth day, and frequently at the second month, but its presence is most characteristic from the third to the sixth months, and diminishes from the seventh month.

Chloro-anæmia may result from the disordered

gastric function and the altered condition of the blood, to improve after the fourth month. At from three to three and a half months, the abdomen begins to regularly and permanently enlarge. The vaginal mucous membrane becomes discolored, assuming a blue or violet color, as this may be found in all cases in which there is a predisposition to a vascular condition of the genito-urinary apparatus it loses its importance as a diagnostic sign. The uterus retains its normal position during the first three months, but the fundus rises as the organ enlarges, while the neck and inferior part subside more towards the floor of the pelvis. This I take to be the principle of Hegar's shortening of the neck of the uterus. At the fourth month the uterus may be felt three or four fingers' breadth above the pubis. The lips of the os uteri begin to soften towards the end of the first month; at the fifth month the cervix diminishes, to be gradually obliterated at the end of term.

M. Larcher, in 1828, and again in 1857, called attention to the hypertrophy of the heart, and M. Blot has confirmed his observations. This hypertrophy, like that of the uterus, passes away after

TABLE OF CASES.

No.	Period Missed.	Date of Examination.	Pulse.			Diagnosis.	Remarks.
			Standing	Sitting	Lying		
1	August 2, 1884	August 27, 1884	72	76	74	Pregnant.	Delivered
2	May 15, 1884	May 20, 1884	64	64	68	"	"
3	July 17, 1885	August 17, 1885	84	86	88	"	"
4	May 25, 1885	August 25, 1885	98	102	98	"	Abortion Sept.
5	June 17, 1885	June 20, 1885	64	68	64	"	" June
6	January 18, 1886	January 23, 1886	96	100	96	"	Delivered
7	August 15, 1886	August 22, 1886	94	100	94	"	"
8	November 8, 1886	November 12, 1886	92	92	92	"	"
9	October 22, 1886	October 26, 1886	96	100	98	"	"
10	April 4, 1887	June 23, 1887	82	82	86	"	"
11	November 13, 1886	January 6, 1887	94	96	95	"	Abortion Feb'y
12	March 15, 1887	March 22, 1887	72	76	74	"	Delivered
13	May 19, 1887	May 29, 1887	86	84	82	"	"
14	November 26, 1887	December 5, 1887	74	78	72	"	"
15	December 17, 1887	December 26, 1887	94	94	94	"	"
16	September 14, 1887	January 3, 1888	66	68	66	"	"
17	March 18, 1888	April 2, 1888	82	86	82	"	"
18	August 12, 1888	September 16, 1888	58	60	55	"	Under observat'n
		September 2, 1888	82	82	86	"	Abortion Dec.
		September 15, 1888	84	84	86	"	"

* Delivered May 1.

delivery. J. Braxton Hicks has published several articles in which he places great faith in the uterine contractions which occur throughout pregnancy, at a time varying from three to twenty minutes and continuing for a space of three to five minutes. I place reliance upon the pulse test, Jorissenne's sign, and have employed it for the past seven years, in a great number of cases.

There can be no possible objection raised to counting the pulse, and the result has removed all doubts in those cases in which I have employed it.

The diagnosis by Hegar's sign, by the thermometer, or by the softened condition of the os uteri, I have not been able to practice sufficiently to draw any satisfactory conclusions, as in each of the cases I have been controlled by the pulse test.

The principal object of this paper is to call attention to the value of the pulse test in those cases where much professional tact is required to solve the question of pregnancy. The following may be cited as a few of the cases in which I have applied this method of diagnosis:

The value of the pulse test consists in the sameness, or very little variation in the number of the radial pulsations, and while it is not infallible it possesses enough certainty to give it a place in the positive signs in forming the diagnosis of pregnancy. According to Jorissenne's article published in the "Ann. Soc. de med-chir de Liege," vol. xxi, he has employed this sign since 1878, and some of the particulars of his cases are most conclusive. He refers to an article of H. Schapiro, published in Russian, in 1881, but I have seen neither the article nor the review of it which was published March 4, 1882, in the *Centralblatt für Medicinischen Wissenschaften*.

AN INTRODUCTION TO THE STUDY OF PNEUMONIC FEVER.

BY EDWARD F. WELLS, M.D.

SEVENTH PAPER—PREVALENCE. AGE.

From the cradle to the grave—from the earliest infancy to the greatest age—man is liable to attacks of pneumonic fever. The newly-born babe, the prattling child, the rollicking boy and winsome girl, the bashful youth and demure maiden, the man in his strength and his mate in her loveliness, the sedate of both sexes as they descend the decline of life, and the aged totterers upon the brink of the grave; all furnish victims to this devouring enemy of mankind.

Although no age is exempt, yet the disease is met with much more frequently at some periods of life than at others. During early childhood pneumonic fever finds easy and exceedingly numerous victims. From 5 to 20 years of age the mortality sinks to its lowest level. From 20 to 40 years the proportion is increased somewhat,¹ to be again considerably augmented during the next score of years.² Old age comes on with a large—the largest—and increasing prevalence.

Grisolle³ says that it is "a disease very frequent from infancy to 20 years of age, . . . comparatively frequent from 20 to 40, less so from 40 to 60," and very frequent, and also very fatal, after 60 years of age."

Whether or no this malady is common in infancy has been a strongly controverted point by different writers.

Swett,⁴ Weber,⁵ Fox⁷ and others⁸ say that the disease may even attack the foetus *in utero*, and Hayne⁹ has recorded the particulars of such a case.¹⁰ It is perfectly well established that infants in the very earliest hours or days of life may be so attacked.¹¹ A fine example of pneumonic fever in an infant 15 days old, subjected to autopsical examination, is recorded by Smith.¹²

In the spring of 1875 a male and a female child, twins, aged 3 weeks, were suddenly attacked with a short, hacking, and apparently painful cough, extreme shortness and rapidity of breathing, and elevation of temperature. They failed rapidly and died, one on the morning and the other during the afternoon of the third day. At the autopsy the pleuræ of both were inflamed, coated with recent lymph, and their cavities contained a quantity of flaky and yellowish serosity. In both were patches of consolidation throughout both lungs. In one of the children the cerebral membranes were intensely congested, with minute points of extravasation in the pia mater.

Another fatal case came under my notice in 1879, in which the patient was only 1 week old. A post-mortem examination was not allowed.

Juergensen¹³ states that at least three-fifths of all the cases of pneumonic fever occur between the ages of 1 and 14 years. Laennec¹⁴ says that children are "very subject to the disease, and the

³ *Traité de la Pneumonie*, Paris, 1841

⁴ This statement is erroneous

⁵ *Diseases of the Chest*, N Y, 1854, p 79

⁶ *Path Anat d Neugeb u Sauglinge*, Bd 11, S 41

⁷ *Reynolds's Syst Med*, Phila, 1880, Vol 11, p 190

⁸ Reuse, *Lungenentzündung*, Leipsic, 1861, S 78, Weber, *Path.*

Neugeb

⁹ *Am Jour Med Sci*, July, 1870, p 222

¹⁰ Forster, *Handb d Path Anat*, Bd 11, S 248, thinks such cases especially prevalent in the course of epidemics of puerperal fever—the poison of which may be absorbed ante partum and affect the foetus. Such cases are usually fatal a few hours after birth. See Fox, l c p 190

¹¹ See Vallée et Vernou: *Mal des Enfants*, Paris, 1838, T 11, p 256; Condie, *Am Jour Med Sci*, July, 1870, p 222 Bouchet, *Diseases of Children* London, 1855, p 325, Chomel, *Pneumonie*, Leipzig, 1841, S 41 Gerhard, *Dis Chest*, Phila, 1860, p 218 Barthéz et Rilliet, *Mal des Enfants*, T 1, p 108, Guersent, *Dic de Méd*, T 111, p 76, Williams, *Cycl Prac Med*, Vol 11, p 406, Laennec, *Traité de l'Auscultation Médiate*, Paris, 1819, p 547, Juergensen, *Ziemssen's Handb. d Spec Path u Therap*, Bd 11, S 21, Gunsburg, *Klinik d Kreislaufs u Athmungs Organe*, Breslau, 1856, Copeland, *Med Dic*, N Y, 1855, Vol 11, p 890, Ziemssen *Pleuritis u Pneumonie bei Kindesalter*, Berlin, 1862, S 155, Sturges, *Nat Hist Pneumonia*, London, 1876, p 124, Lombard *Arch Gen de Méd*, January, 1831 Baginsky, *Pneumonie u Pleuritis*, Tub 1880, S 3 Jorg *Handb d Kinderkrankh*, 1836, Seiffert, *Bronchopneumonie d Neugeborenen*, Berlin, 1837, Steffen, *Klinik d Kinderkrankh*, 1865, Rautenberg, *Jahrb. für Kinderheilk*, 1875, Bd 111, Gerhard, *Kinderkrankh*, 1871 Henoch, *Kinderheilkunde*, Berlin, 1868, Bd 11, S 150, Steiner, *Kinderkrankheiten*, 1873, Pause, *Lungenentzündung* Leipzig, 1861, S 642 Friedleben, *Arch f Phys u Heilk*, 1874, La Roche, *Pneumonie*, Phila, 1854, p 423, Billard, *Mal des Nour-Nés* Paris 1833, Forbes, *Trans Laennec, Dis Chest*, N Y, 1830, p 226, and a great many others

¹² *Med Gaz* (N Y), May 26, 1883, p 243

¹³ *Berliner klin Wochenchr*, 1884, Nr 17

¹⁴ *Dis Chest*, N Y, 1830, p 226

¹ Green, in *Quain's Dic Med*, N Y, 1883, p 874, says that it is extremely frequent at this period, but this opinion is at variance with my statistical investigations

² See Cullen, *Prac Phys*, Phila, 1792, Vol 1, p 182

more so the younger they are." Audral¹⁵ affirms that "children are particularly prone to attacks of this malady, . . . it being one of the most powerful causes of the mortality of early life." Guersant¹⁶ was of the opinion that "three-fifths of the children that die in the hospitals of Paris between birth and the conclusion of the first dentition die of pneumonia." Gerhard¹⁷ says that few children die without pulmonary inflammation.

Lombard¹⁸ says: "From the first to the eighth day of life pneumonia constitutes seven-tenths of all the sickness, and one-sixth of the deaths are caused by this disease. As the function of the lungs is better established there is a falling off in the number of cases. In the second week pneumonia constitutes two-ninths of the sickness. Beyond the third week there is a considerable diminution in the proportion of cases. Between 6 weeks and 2 months it causes two-ninths of all sickness. From 2 to 6 months only one-tenth, but afterwards the ratio increases again. From 1 to 2 years it causes one-third of all sickness. From 2 to 6 years the proportion falls to from one-fourth to one-fifth. From 6 to 8 years it is a trifle greater. Between 8 and 11 years the proportion sinks to between one-fourth and one-sixth. In the twelfth year pneumonia is more frequent than in the immediately preceding or following years."

Of 608 cases analyzed by Louis,¹⁹ 206 were under 18 years of age, 118 from 18 months to 14 years, and 284 from 14 to 83 years.

That the disease, contrary to the opinions of some,²⁰ is a very common one in early life, is also proved by the following facts gleaned from registration reports:

Of 1,553 deaths from pneumonic fever in Manchester, Liverpool and Birmingham in 1839, 1,131, or 73 per cent., were under 5 years of age. Of 25,145 deaths from this cause in England in 1866, 17,460, or 69.4 per cent., were below the age of 5. Of 2,228 deaths from this disease in New York City in 1878, 1,134, or 54 per cent., were under 5 years of age. Of 60,675 deaths from this malady reported in twelve large American cities during recent years, 23,895, or 40 per cent., were below the age of 5. During a series of nineteen years in Massachusetts, twenty-four years in Vermont and fifteen years in Rhode Island, there were 46,563 deaths from pneumonic fever, and of these 17,284, or 37 per cent., were under 5 years of age. In the years 1883-4-5, in Ontario there were 3,797 deaths from this cause, 1,330, or 35 per cent., of which were under 5 years of age. In the United

States, in 1880, there were reported for analysis 63,079 cases of this disease, 19,004, or 33 per cent. of which were children under the age of 5 years.²¹

Reasoning from these statistics we are safe in estimating that at least one-third of all fatal cases of pneumonic fever are children under the age of 5 years.

It has been asserted that children are now more susceptible to pneumonic influences than formerly, but its more frequent appreciation in recent years is probably due to our improved diagnostics.

Thus, in the Vienna Institution for Children this disease was said to constitute but 2.3 per cent. of the total sickness at the beginning of this century,²² whilst fifty years later the proportion had risen to 7 per cent.²³

In this connection the difficulties of diagnosis in infantile pneumonic fever must not be underestimated. For an accomplished diagnostician these are by no means trifling, and we know only too well that, unfortunately, all persons who are by law empowered to write certificates of death are not of this class. There can be no doubt that a considerable number of children who are reported as having succumbed to "teething," "convulsions," "worms," "cerebral disease," etc.,²⁴ would be found to present the evidence of pneumonic inflammation were they subjected to necropsical examination. These remarks apply equally to many aged persons reported as dying from "coma," "cerebral disease," "apoplexy," "debility," etc.

These circumstances vitiate, to a certain extent, the value of all public mortality statistics. Hospital returns are but little more reliable, inasmuch as all ages do not alike frequent them.

Pneumonic fever attains its greatest prevalence in those who have passed the meridian of life.²⁵

Loomis²⁶ is of the opinion that fully 90 per cent. of the deaths of persons over 65 years of age are caused by this malady; in this, however, he is clearly in error, probably from trusting to individual impressions, rather than to statistics.

At the Soldiers' Home in Dayton 48 per cent. of all deaths in patients over 70 years of age are from pneumonic fever.²⁷

Humphrey²⁸ records a successful case of this disease in a female 104 years of age, and Lœber²⁹ one in a man of the great age of 110 years. In the United States in 1880, seventy-nine persons over 95 years of age died from this malady.³⁰

²¹ No attempt has been made to embody all the available material on this subject.

²² Göllis, *Krankheiten d. Kindesalter*, Wien., 1820.

²³ Ziemssen, *Pneumonie u. Pleuritis*, Berlin, 1862.

²⁴ One Cincinnati certificate bore the legend that "She died with Liver dease & New Monei." See N. Y. Med. Rec., June 5, 1886, p. 668.

²⁵ See Quain, *London Med. Jour.*, October, 1850; Day, *Diseases of Old Age*, London, 1849; Niemeyer, *Spec. Path. u. Therap.*, Berlin, 1862, Bd. ii; Patton, *Jour. Am. Med. Assoc.*, October 16, 1886, p. 425; Davis, *Prin. and Prac. Med.*, Chicago, 1884; Hourmann et Dechambre, *Arch. Gén. de Méd.*, T. xii; Grisolle, *de la Pneumonie*, p. 425; Fox, *Reynolds' Syst. Med.*, Vol. ii, p. 186; and many others.

²⁶ Charcot's *Diseases of Old Age*, N. Y., 1881, p. 207.

²⁷ Patton, *Op. cit.*, p. 425.

²⁸ N. Y. Med. Rec., October 23, 1886, p. 473.

²⁹ *Lungenentzündung*, etc., Dresden, 1771.

³⁰ U. S. Census Report, 1880.

¹⁵ *Med. Clin.*, Phila., 1843, Vol. ii, pp. 183, 203.

¹⁶ *Dic. de Méd.*, T. viii, p. 96.

¹⁷ *Am. Jour. Med. Sci.*, Vol. xiv, p. 328.

¹⁸ *Arch. Gén. de Méd.*, January, 1831.

¹⁹ *On Phthisis*, Boston, 1836, p. 466.

²⁰ Morgagni, *De Caus. et Sed. Morb.*; Cullen, *Prac. Physic.*, Phila., 1792, Vol. i, p. 182; Ruzf, *Jour. Con. Méd. Chir.*, 1834, p. 101; Smith, *Dis. Lungs in Children*, N. Y., 1881; Green, *Quain's Dic. Med.*, N. Y., 1883, p. 874; Flint, *Prac. Med.*, Phila., 1868, p. 180; Hewitt, *London Lancet*, N. Y., 1857, Vol. i, p. 156; Tanner, *Diseases of Infancy and Childhood*, Phila., 1871, p. 303; Wilbrandt, *Inaug. Diss.*, Rostock, 1862; Huss, *Lungenentzünd.*, Leipzig, 1861; and many others.

The prevalence of pneumonic fever as influenced by age is shown by the following tables:

TABLE XVII—SHOWING PREVALENCE OF PNEUMONIC FEVER BY AGES

Morbidity	Authority	Cases by Ages										Tot
		Mortality										
		—5-10	10-20	20-30	30-40	40-50	50-60	60-70	70—			
	Author ³¹	138	76	17	55	27	35	28	64	28	498	
	Bamberger ³²		2	23	62	38	28	21	5	6	187	
	Biach ³³		7	295	489	259	209	128	92	43	1522	
	Chomel ³⁴				83	63	61	38			245	
	Doubleclay ³⁵				88	60	41	18	16	2	248	
	Flint ³⁶		2	21	88	60	41	18			118	
	Grisolle ³⁷			13	44	37	17	7	84	37	11	630
	Hues ³⁸			84	100	117	107	84	350	550	2016	
	Juergensen ³⁹		9	1450	850	800	500	450	29	4	330	
	Hues ³⁹	116	55	22	21	23	22	22	29	13	258	
	Roth ⁴⁰		1	25	79	43	30	34	15	10	237	
	Schuppraz ⁴¹		2	71	73	27	24	26	27	8	258	
	Waller ⁴²			20	31	9	9	8	4		72	
	Ziemssen ⁴⁴	95	68	23							186	
	Totals	349	222	2323	3106	2319	1446	998	668	655	12147	
	Per cent	2.8	1.8	19.1	25.5	19.1	11.9	8.1	5.5	5.5	100.0	

TABLE XVIII—SHOWING PREVALENCE OF PNEUMONIC FEVER BY AGES

Mortality	Authority	Deaths by Ages										Tot
		Mortality										
		— 5	5 10	10-20	20 30	30 40	40 50	50 60	60 70	70 —		
	New York City, 1878	1234	74	41	116	161	178	172	153	159	2288	
	Connecticut, 1886	204	35	28	59	59	75	99	126	204	889	
	Zurich, 1810, 48, 49, 50, 51	850	141	27	69	104	169	322	521	279	2481	
	Massachusetts, 1863-81	13973	1131	449	954	2428	2786	3176	3497	6945	35339	
	Vermont, 1857-80	2047	167	327	377	323	457	699	1076	2132	7603	
	Rhode Island, 1865-79	1264	96	115	207	236	296	341	469	595	3619	
	Ontario, 1883-85	1330	143	217	377	309	339	311	361	416	3797	
	Cleveland, 1887	171	13	15	17	16	21	17	21	20	311	
	United States, 1880	19004	2226	4724	6650	5564	5598	5777	6242	6996	63079	
	St Louis, 1885-86	338	31	40	92	95	105	113	80	61	1007	
	California, 1884	35	1	9	12	26	31	17	22	10	166	
	Totals.	49550	4058	6002	8930	9321	10058	11044	11568	17814	120579	
	Per cent	33.6	3.3	5.0	7.4	7.7	8.3	9.1	9.1	14.7	100.0	

The relation which the mortality from pneumonic fever bears to that from all diseases at the same age is shown in table xix.⁵⁵

TABLE XIX—SHOWING PROPORTIONAL PREVALENCE OF PNEUMONIC FEVER BY AGES

Mortality	Age	Ontario 3 years					U S, 1880					Zurich, 5 years					Total				
		All	P	I	%		All	P	F	%		All	P	F	%		All	P	I	%	
	—5	21,650	1,330	61	305,624	19,004	62	10,275	850	8.3		331,549	21,184	6.3			47,228	4,598	9.7		
	5-10	2,582	143	4.9	43,093	2,226	5.2	1,545	141	9.1		47,228	4,598	9.7			30,498	2,977	9.8		
	10-20	4,009	217	5.4	52,283	4,734	8.1	916	27	2.9		30,498	2,977	9.8			30,498	2,977	9.8		
	20-30	6,383	377	5.9	72,487	6,650	8.9	1,624	69	4.2		30,498	2,977	9.8			30,498	2,977	9.8		
	30-40	4,601	309	6.5	57,299	5,954	9.7	1,818	104	6.2		30,498	2,977	9.8			30,498	2,977	9.8		
	40-50	3,891	339	9.5	48,950	5,598	11.4	2,624	169	8.1		30,498	2,977	9.8			30,498	2,977	9.8		
	50-60	3,826	311	7.9	40,891	5,777	12.3	4,339	322	12.3		30,498	2,977	9.8			30,498	2,977	9.8		
	60-70	4,875	361	7.4	51,868	6,242	12.0	4,339	521	12.0		30,498	2,977	9.8			30,498	2,977	9.8		
	70—	11,098	410	7.6	75,170	6,996	17.2	4,339	279	6.5		30,498	2,977	9.8			30,498	2,977	9.8		
	Total	63,015	3,797	6.0	753,665	63,079	8.3	29,147	2,481	8.5		845,827	69,357	8.6							

The mortality rate, per 1,000 of population, of the same age, is shown in the following table:

TABLE XX—SHOWING PREVALENCE OF PNEUMONIC FEVER BY AGES

Mortality per 1,000 of population of same age, U S, 1880

Age	Population	Pneumonic Fever	Per 1,000
—5	6,914,516	19,004	2.75
5-10	6,479,660	2,226	3.3
10-20	10,726,601	4,734	4.4
20-30	9,168,393	6,650	7.2
30-40	6,369,362	5,564	8.7
40-50	4,558,256	5,598	12.3
50-60	3,111,317	5,777	18.5
60-70	1,830,985	6,242	34.1
70—	1,007,583	6,996	6.95

SEX.

Pneumonic fever does not prevail equally in the two sexes—males being attacked oftener than females. This statement has been copied from

⁴⁰ Ziemssen's Handb d Spec Path u Therap, Bd v, S 26

⁴¹ Statistik d Pneumonie, Wurzb, 1860

⁴² Quoted by Lepine, Pneumonie, Wien, 1883, S 16

⁴³ Inaug Diss Erlangen, 1877 S 26

⁴⁴ Pleuritis u Pneumonie, Berlin, 1862

⁴⁵ Rept Bd Health, 1878

⁴⁶ Rept Bd Health, 1886

⁴⁷ Weller, Inaug Diss, 1854

⁴⁸ Reg Rpt, 1881

⁴⁹ Reg Rpt, 1880

⁵⁰ Reg Rpt, 1879

⁵¹ Reg Rpts, 1883-4-5

⁵² Rpt Bd Health 1887

⁵³ Census Rpts, 1880

⁵⁴ Rpts Health Com 1885-86

⁵⁵ Rpt Bd Health, 1886

⁵⁶ These results differ essentially from those given by Osterlen,

Med Statistik, Tubingen, 1865

³¹ Private Records

³² Wiener med Wochenschr, 1857, S 897

³³ Med Jahresb, 1879

³⁴ Pneumonie, Leipzig, 1841, S 316

³⁵ N Y Med Record, March 25, 1885, p 342

³⁶ Prac Med, Phila, 1868, p 180

³⁷ Traité de la Pneumonie, p 101

³⁸ Klinik d Kreislaufs u Athmungsorgane, Breslau, 1856

³⁹ Lungentzündung, Leipzig 1862, S 74

one text-book into another from time immemorial, and is always accompanied by the simple and plausible explanation that, inasmuch as the habits and occupations of males lead to exposure of all kinds to a greater extent than their congeners, they are, therefore, oftener the subjects of this disease. In other words, it is affirmed that males are not more predisposed to the malady than are females, but are merely more exposed to what has been supposed to be the exciting causes.

LaRoche⁵⁷ is quite clear on this point, saying that "there are facts sufficient on record to warrant the assertion that this greater prevalence of the disease in the first mentioned (male) sex is not due to an inherent susceptibility, but to the result, when it occurs, of a series of fortuitous causes; more particularly to the circumstance that males—owing to the nature of their avocations and mode of life—are usually more exposed than females to the causes of pulmonary inflammations; and that in places where exposure is equal in both sexes the disease manifests itself as frequently in one as the other."

Other writers have made similar statements. Thus, Swett⁵⁸ says that males are attacked oftener than females because of increased exposure, for, "where the sexes are equally exposed to the vicissitudes of the weather the difference is not striking." Chomel⁵⁹ says that the apparent cause of this difference in the liability of the two sexes to attacks of the disease is in their work, and that in the case of young children and very aged persons this does not appear. Peacock⁶⁰ says that "the greater tendency to pneumonia in men is simply due to their exposure to the exciting causes of the disease." Fox⁶¹ affirms that this difference between the sexes is not observable in the earlier periods of life, but it becomes apparent first at ages when the occupations of the sexes differ, and when the males are more exposed to climatic influences than females. When, however, the conditions of life for both sexes are identical, this relative disproportion in a great measure disappears.⁶²

This is only partially, if at all, true for, independent of such influences, there is an inherent propensity in the male, greater than in the female, to take on this form of disease. Indeed the proportion of males over females attacked is greatest in the earliest years of life and at an age when both sexes are exposed in an equal degree to the vicissitudes of the weather and other alleged causes of the malady. In this instance, as in so

many others, we must accept the fact, although we remain ignorant of the cause."⁶³

The facts above indicated are clearly set forth in the following tables and statements:

TABLE XXI.—SHOWING PREVALENCE OF PNEUMONIC FEVER BY SEXES.

AUTHORITY.	Cases	Males.		Females.	
		Cases	%	Cases	%
Author. Private records	498	295	59.3	203	40.7
Borland, Boston City Hosp. Rpts., 1870 . .	190	118	63.0	72	37.0
Bouillaud, Dic. de Méd., T. xiii	26	25	96.0	1	4.0
Briquet, quoted by Chomel, Pneumonie . .	141	94	66.6	46	33.4
Boston City Hosp. Rpt., 1886	152	110	72.4	42	27.6
Chomel, Pneumonie, Leipzig, 1841, S. 317 .	275	212	77.0	63	23.0
Deutsche Med. Zeit., '83, Tregagno Epid. Doubleday, N. Y. Med. Rec., Mar. 28, '85, p. 343	100	50	50.0	50	50.0
Folkmann, In. Diss., Erlangen, 1847, S. 9 .	252	200	80.2	52	19.8
Holt, N. Y. Med. Rec., Apr. 7, 1888, p. 386 .	125	79	63.2	46	36.8
Huss, Lungenentz., Leipzig, 1862, S. 71 .	234	142	60.7	92	39.3
Juergensen, Ziemssen's Hand., Bd. v, S. 23 .	2710	2259	83.3	451	16.7
Louis, On Phthisis, Boston, 1836, p. 440 .	765	417	54.5	348	45.5
Newport Hosp. Rpts., 1884-87	75	52	70.9	23	30.0
New York Hosp. Rpts., 1878-87	29	20	68.9	9	31.1
Providence Hosp., Washington, Rpt., '87 .	577	460	79.9	117	20.1
Peacock, St. Thomas' Hosp. Rpts., Vol. v, 1875	9	5	55.5	4	44.5
Roosevelt Hosp., N. Y., Rpts., 1872-86 . .	100	81	81.0	19	19.0
St. Louis Hosp. Rpts., 1886-87	492	364	74.0	128	26.0
Vienna Hospits., Biach, Statistik, 1882 . .	9	3	33.3	6	66.7
"Juergensen, l. c. S. 23	11442	8247	72.0	3195	28.0
Waller, Inaug. Diss., Erlangen, '77, S. 26 .	7942	5457	68.8	2485	31.2
Weller, Inaug. Diss., Zürich, 1854, S. 38 .	81	71	87.6	10	12.4
Wilbrandt, In. Diss., Rastock, 1862, S. 9 .	30	20	66.7	10	33.3
Schwarz, Inaug. Diss., Erlangen, 1881 . .	126	105	83.3	21	16.7
Folkmann, Inaug. Diss., Erlangen, 1847 .	10	7	70.0	3	30.0
Baginsky, Pneumonie u. Pleuritis, S. 4 . .	125	79	63.2	46	36.8
Ziemssen, Pleuritis u. Pneumonie, S. 156 .	1023	556	54.1	467	45.9
Kocher, Pneumonie, etc., Würzb., 1866 . .	186	114	61.3	72	38.7
Totals	29	21	72.4	8	27.6
Totals	27653	19963	72.2	7740	27.8

TABLE XXII.—SHOWING PROPORTIONAL PREVALENCE OF PNEUMONIC FEVER BY SEXES.

AUTHORITY.	Total.		Males.		%.	Females.		%.
	Adm.	P.F.	Adm.	P.F.		Adm.	P.F.	
Vienna Gen. Hosp., 1858-70	299,929	7942	188,273	5467	2.9	111,646	2475	2.2
N. Y. Hospital, 1878-87	42,394	577	32,789	460	1.4	9,605	117	1.2
Roosevelt Hosp., 1872-86	25,562	492	16,720	364	2.2	8,842	128	1.4
Providence Hospital, 1887	1,642	9	1,147	5	.4	495	4	.5
Newport Hosp., 1884-85	357	29	221	20	.9	136	9	6.6
Author	30,482	498	17,636	295	1.7	12,846	203	1.5
Totals	400,366	9547	256,786	6611	2.5	143,570	2936	2.0

TABLE XXIII.—SHOWING PREVALENCE OF PNEUMONIC FEVER BY SEXES.

AUTHORITY.	Deaths from P. F.	Males.		Females.	
		Deaths.	%.	Deaths.	%.
England and Wales, 1839, Reg. Rpt. . .	18,151	10,000	55.5	8,151	44.9
London, 1838-39, Reg. Rpt.	7,431	3,954	53.2	3,477	46.8
New York, 1878, Health Rpt.	2,288	1,204	52.6	1,084	47.4
Eighteen Am. Cities, Reg. Rpts.	57,587	29,507	51.6	28,080	48.4
U. S. 1870 and 1880, Census Rpts.	103,065	57,851	56.1	45,214	43.9
Ziemssen, Prag. Vierteljs., 1858	161,640	89,533	55.5	72,107	44.5
Massachusetts, 1881, Reg. Rpt.	2,967	1,481	50.0	1,486	50.0
Rhode Island, 1865-70, Reg. Rpt.	3,026	1,773	48.9	1,253	51.1
Zürich, 1840-51, Weller, l. c.	2,482	1,243	50.0	1,239	50.0
Vermont, 1857-70, Reg. Rpts.	7,331	3,709	50.6	3,616	49.4
Connecticut, 1885-86, Reg. Rpts.	1,268	675	53.3	593	46.7
Ontario, 1883-85, Reg. Rpts.	3,938	2,167	55.0	1,771	45.0
Massachusetts, 1860, Reg. Rpts.	1,639	931	56.8	708	43.2
St. Louis, 1886-87, Reg. Rpts.	1,007	595	59.1	413	40.9
Totals	374,920	204,628	54.6	169,738	45.4

⁵⁷ Pneumonia, Phil., 1854, p. 418.

⁵⁸ Diseases of the Chest, N. Y., 1856, p. 82.

⁵⁹ Pneumonie, Leipzig, 1841, S. 317.

⁶⁰ St. Thomas' Hosp. Rpts., 1875.

⁶¹ Reynold's Syst. Med., Phila., 1880, Vol. ii, p. 156.

⁶² For further opinions in the same strain consult Grisolles, Traité de la Pneumonie, Paris, 1841, p. 114; Williams, Cycl. Prac. Med., Vol. iii, p. 289; Valleix, Guide du Méd. Prat., T. ii, p. 259; Green, Quain's Dic. Med., N. Y., 1893, p. 874; Tanner, Infancy and Childhood, Phila., 1872, p. 308; Huss, Lungenentzündung, Leipzig, 1862, S. 71; Lépine, Pneumonie, Wien., 1883, S. 18; Fagge, Prac. Med., 1887; Satterthwaite, Phila. Med. News, Jan. 5, 1889, p. 3.

malady, especially when removed from his native land. The average African's indolence, habits, mode of living, loss of sleep, debauchery, venereal excesses, cold sleeping rooms, exposure to night air and, to him, low range of temperature, etc., are conditions which certainly have an influence in causing an excessive prevalence in this race as seen in this country.

The functions of the skin in the negro are more extensive and important than in the Caucasian. It is more actively depurative and is to a greater extent supplementary to the lungs and liver—throwing off a great amount of moisture and carbonic acid—and external impressions which cause suppression of the perspiration are prone to be followed by pneumonic fever.

The disease is asthenic, rapidly exhaustive, attended with marked mental and physical prostration and is often latent and unsuspected. Copious effusion into the pleural sac, alveoli and bronchi is the rule. It frequently appears as an intercurrent affection—often without subjective symptoms.

During a series of years there occurred at the Memphis Marine Hospital 404 cases of disease amongst the white sailors, with 10 cases of pneumonic fever—.22 per cent.—whilst the blacks furnished 525 cases of all diseases, with 26 of pneumonic fever—5.0 per cent.⁶⁹ In the British Army this malady affords 20.2 and 33.3 cases per 1000 of force annually in whites and blacks respectively.⁷⁰ In 1880, in the Southern States⁷¹ pneumonic fever figured in the census returns one-half more in the case of the blacks than in the whites.

Pneumonic fever is very prevalent amongst the American Indians. In a population of 78,521 the death-rate was 2.65 per 1000 persons and it caused 7.4 per cent. of all deaths.⁷² It is also common to the Esquimaux, in whom it is very fatal, assuming a low, adynamic course.

The Malays and the natives of Hindostan and Burmah are but little prone to attacks of this disease.⁷³ This is also true of the Chinese.⁷⁴

The malady is more prevalent in some branches of a race than in others. Thus it is the cause of a greater proportion of deaths in the Celt than in the Teuton.⁷⁵

RESIDENCE.

Where people congregate for residence, there, other things being equal, will pneumonic fever be found in the greatest proportion.⁷⁶ This fact

is shown in the following tables and statements :

TABLE XXVII.—SHOWING PREVALENCE OF PNEUMONIC FEVER IN RURAL AND URBAN DISTRICTS.

COUNTRY.	AUTHORITY.	Country.	Cities.	Excess in	
		Per 1000 Pop.	o 2	Per 1000 Pop.	State City.
Alabama	U. S. Census Rpts.	1.38	2	1.44	. . . .06
Ireland	Ziemssen . . . .	.27	4	.58	. . . .31
Belgium	Sanders . . . .	.85	2	1.74	. . . .89
Germany	Sanders, Hirsch .	1.34	19	1.54	. . . .20
Massachusetts.	U. S. Census Rpts.	1.35	1	1.23	.12 . .
New York. . . .	Ibid.	1.03	3	1.82	. . . .79
California	Ibid. . . . .	.74	2	1.61	. . . .87
South Carolina	Ibid.	1.12	1	1.30	. . . .18
Scotland. . . .	Sanders . . . .	.73	8	1.12	. . . .39
Nor. & Sweden.	Sanders	1.60	2	2.00	. . . .40
Illinois	U. S. Census Rpts.	1.48	1	1.09	.39 . .
Ohio.	Ibid., Health Rpts.	.75	2	1.47	. . . .72
Colorado. . . .	U. S. Census Rpts.	1.92	1	1.85	.07 . .
Denmark. . . .	Sanders, Ziemssen	1.57	1	1.71	. . . .14
France	Sanders	1.90	1	2.56	. . . .66
Louisiana. . . .	U. S. Census Rpts.	1.56	1	1.59	. . . .03
Maryland. . . .	Ibid., Health Rpts.	1.13	1	1.13	. . . .
Wisconsin. . . .	U. S. Census Rpts.	.78	1	.90	. . . .12
Connecticut . .	Ibid., Health Rpts.	1.15	2	1.43	. . . .28
Ontario.	Reg. Rpts. . . .	.51	9	1.02	. . . .51
	U. S. Census Rpts.,				
Pennsylvania . .	Reg. Rpts. . . .	.97	2	1.47	. . . .50
Rhode Island . .	U. S. Census Rpts.	.90	1	1.50	. . . .60
Virginia	Ibid., Health Rpts.	1.24	2	1.52	. . . .28
Missouri. . . .	Ibid.	2.18	1	3.77	. . . .59
Switzerland . . .	Sanders	1.50	3	1.71	. . . .21
Averages		1.21		1.62	. . . .41

In London, in 1838–39 there were reported 7,431 deaths from pneumonic fever, whilst the rural counties of Cornwall, Devonshire, Dorsetshire, Somersetshire and Wiltshire, with about the same aggregate population, returned, during the same years, but 3,446 deaths from the same cause, being in the proportion of 1000 urban to 463 rural. In these same years twenty-four town districts in England returned 15,062 deaths from this cause, whilst twelve country districts, having approximately the same population, returned only 6,218 deaths from the same cause, being in the proportion of 1000 urban to 413 rural.⁷⁷

It follows, as a reasonable conclusion, that if pneumonic fever is more prevalent in the towns than in the cities that, in general, it will be met with more frequently in the larger cities than in the smaller ones,⁷⁸ and this can be shown to be a fact.

TABLE XXVIII. SHOWING PREVALENCE OF PNEUMONIC FEVER IN CITIES ACCORDING TO SIZE.

Mortality.		
Population.	Cities No.	Per 1000 Pop.
Above 1,000,000	5	1.82
500,000 to 1,000,000	11	1.74
200,000 to 500,000	28	1.79
100,000 to 200,000	52	1.45
50,000 to 100,000	36	1.18
10,000 to 50,000	93	1.24
Total and average	225	1.38

Although pneumonic fever is comparatively infrequent in sparsely settled districts,⁷⁹ it there pursues a more acute course than in populous neighborhoods.

⁶⁹ Armstrong, op. cit., p. 129. ⁷⁰ Tulloch, op. cit.
⁷¹ U. S. Census Rpts., 1880.
⁷² See U. S. Census Rpts., 1880; See also Glissan, Coolidge's Rpts., p. 276. It is very common and very fatal on the Indian Reservation of the West. See Coolidge's Rpts., p. 269; Hirsch, op. cit.; Drake, Dis. Int. Valley N. A., Cincinnati, 1850.
⁷³ See Balfour, Edinb. Med. and Surg. Jour., Vol. lxviii, p. 33; Hirsch, op. cit.
⁷⁴ U. S. Census Rpts., 1880, Vol. xi, p. 559.
⁷⁵ U. S. Census Rpts., 1880.
⁷⁶ Ziemssen, Präger Vierteljahrschr., 1858; Hirsch, Hist. u. Geog. Path. Bd. ii; Copeland, Med. Dic. Vol. ii; Drysdale, N.Y. Med. Rec., Oct. 22, 1887, p. 551; Gairdner, London Lancet, 1887, Vol. ii, p. 247; Juergensen, Ziemssen's Handb. d. Spec. Path. u. Therap., Bd. v, S.

20; Sanders, Am. Jour. Med. Sci., July 1882, p. 89; Geike, Trans. Int. Med. Cong., N. Y. Med. Rec., Sept. 10, 1887, p. 294; Fox, Reynold's Syst. Med., Phila., 1880, Vol. ii. ⁷⁷ Reg. Gen. Rpts., 1838–9.
⁷⁸ Sanders, Am. Jour. Med. Sci., July, 1882, p. 90.
⁷⁹ See Geike, op. cit.; et al.

Domiciliary crowding is accompanied by an excessive prevalence of the disease.⁶⁰ Those who are ground down by the iron heel of poverty suffer far more than the wealthy.⁶¹

Those who go down to sea in ships are but little liable to attacks of this disease.⁶²

Thus of 24,000 sailors in the French navy only 175—7.3 per 1000—were attacked by pneumonic fever.⁶³ In the U. S. navy it is even less prevalent, being in 1880, 5.2, per 1000, and in 1881, 4.5 per 1000.⁶⁴

Soldiers are more liable to attacks of pneumonic fever than are civilians of the same age.⁶⁵ Thus in France the number of cases per 1000 of military age is 30, whilst in the French Army it is 39. Common soldiers suffer more than officers, and infantry more than cavalry.⁶⁶

In garrison they suffer more than when on the march, in peace than in war⁶⁷ and on land than at sea.⁶⁸ These facts are probably due to the fine weather, pure air and healthy condition of the troops, when a march, campaign or voyage is undertaken.

The inmates of prisons, asylums, monasteries are said to be more liable to attacks of this malady than persons enjoying their freedom,⁶⁹ but this is not borne out by my experience or investigations.

For many years I saw all the cases of illness occurring among 500 inmates of cloisters, and met with pneumonic fever only twice in eight years.

Addison⁷⁰ says that "it is somewhat singular that, as a general rule, pneumonia is a disease not often met in hospital wards." This statement does not agree with the statistics which I have adduced or the observations of physicians generally.⁷¹ Indeed I am convinced that the proportion is greater than in private practice.

RECURRENCE.

A person who has once had pneumonic fever is subsequently more liable to be attacked than one who has never experienced the disease.⁷²

Of 78 infantile cases analyzed by West, 31 had had previous attacks—21 twice, 4 thrice, 2 four times, and 4 several times. Ziemssen found that of 201 cases, 19 had had the disease previously—14 twice, 3 thrice, and 4 four times. Of 175 cases tabulated by Grisolle, 54 had had preceding attacks. Of 212 cases analyzed by Griesinger, 36 had had the disease before. Rush⁷³ has noticed three, four, five and eight attacks in the same individual, Paget seven, Chomel ten, Frank eleven. Kocher⁷⁴ eleven, Andral sixteen, and Rust⁷⁵ as many as twenty-eight. Of 252 cases reported by Doubleday⁷⁶ 12 had had previous attacks. Of my 498 cases 101 had had the disease previously—76 twice, 14 thrice, 5 four times, 1 six times, and 1 eight times. In quite a large number of patients treated for other maladies the history developed the fact that they had previously suffered from multiple attacks of pneumonic fever.

Children are peculiarly liable to multiple attacks, Juergensen recording the case of a girl four years of age, who had already had six attacks.

The intervals between the attacks may be more or less prolonged—varying from a few weeks to several years.⁷⁷ They are necessarily shorter in proportion to the frequency of recurrence. Ziemssen's⁷⁸ inquiries developed the curious fact that in some cases there is a tendency to recurrence at about the same time each year.

Thus in one case the first attack occurred Dec. 17, 1856, and the second Dec. 12, 1857. In another case the first attack occurred Aug. 8, 1856, and the second July 6, 1857. In yet another instance the first attack came on Jan. 28, 1856, the second Jan. 6, 1858, and the third Jan. 25, 1859.

Such coincidences have not been conspicuous in my list of cases.

Recurrence is oftenest noticed when the local lesion is in the left lung,⁷⁹ and the same lung is apt to be again and again affected,⁸⁰ although not necessarily in the same part.⁸¹

The persistent recurrences of pneumonic fever has been attributed to the gouty diathesis.⁸² In England, where gout, amongst the upper classes, is the national disease and the insignia of age and respectability, the occurrence of repeated attacks of this disease in subjects of this diathesis may be a frequent coincidence, but I venture the assertion that recurrent attacks occur with equal frequency in other lands where gout is almost unknown.

⁶⁰ Sanders, op cit, p 91, Gardner, op cit, p 247.
⁶¹ Hirsch, op cit, S 37, Vacher Med Stat et Mortal, etc, en Paris, 1865, p 139, Newton, Trans Conn Med Soc, 1888.

⁶² Grisolle, Traité de la Pneumonie, Swett, Dis Chest p 81, Fox op cit, p 154, Hermann, Lungenentzündung, S 6.

⁶³ LeRoy de Méincourt, quoted by Grisolle.

⁶⁴ U S Naval Rpts, 1880-81.

⁶⁵ Laveran, Ann d'Hyg, 1860, Fox, op cit, p 155, Hermann, op cit, S 60, Lancereaux Ann d'Hyg, T xiii p 209, Valleix, Prat Méd, Marsten, Trans Int Med Cong Washington, 1887.

⁶⁶ Fox, op cit, p 155, Hermann, op cit, S 20.

⁶⁷ See Hermann, op cit, S 6.

⁶⁸ Lebert, Klinik d Brustkrankh, S 710, comes to an opposite conclusion on this point.

⁶⁹ Vacher, op cit, p 139, Juergensen, op cit, S 21, et al.

⁷⁰ London Lancet, N Y, 1855 Vol 1, p 357.

⁷¹ Faure-Villars, Mém de Méd Mil, 1853, p 204.

⁷² Frank, Interpret Clinice, Tub, 1812, p 96, Grisolle, Traité de la Pneumonie, p 3, Andral, Méd Clin, Vol 11, p 192, Chomel, Pneumonie, S 319, LaRoche, Pneumonia, 1854, p 400, Schuyler, N Y Med Jour, 1883, Sept and Oct, pp 232-401, Ziemssen, Pleuritis u Pneumonie S 153, Flint, Jour Am Med Assn, Nov, 1885, p 613, Paget, Clin Lec, Juergensen, Ziemssen's Handb Bd v, S 29, Orton, Med News, Nov, 28 1885, p 613, Griesinger, Arch d Heilk, Bd 1, S 471, Curtis, Boston Med and Surg Jour, Mar 17, 1881, p 251, Baker, Proc Mich Bd Health, Oct 1, 1886, p 11, West, Dis Children, Col Int Com Rpt, Brit Med Jour, Dec 1, 1883, Doubleday, N Y Med Rec, Mar 28, 1885, p 343, Weber, N Y Med Rec, Apr 4, 1886,

p 373, Baginsky, Pneumonie, etc, Wurzb, 1880, S 8, Smythe, Trans Indiana Med Soc, 1888 p 34.

⁷³ Quoted by LaRoche, op cit, p 400.

⁷⁴ Lungenentzündung, etc, Wurzb, 1866, S 4.

⁷⁵ Quoted by Ziemssen, op cit, S 154.

⁷⁶ N Y Med Rec, Mar 28, 1885, p 343.

⁷⁷ Fox Reynolds's Syst Med, Phila, 1880, Vol 11, p 157, found recurrence to take place, usually, in from 3 to 5 years.

⁷⁸ Op cit, S 153. ⁷⁹ Fox, op cit, p 157.

⁸⁰ Kocher op cit, S 4. ⁸¹ Juergensen, op cit, S 29.

⁸² Curtis, Boston Med and Surg, Mar 17, 1881, p 251, Paget, op cit.

REPORTS FROM HOSPITALS.

SURGICAL CLINICS AT THE WESTERN PENNSYLVANIA HOSPITAL BEFORE THE STUDENTS OF THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

BY PROFESSOR J. B. MURDOCH,

SURGEON TO THE WESTERN PENNSYLVANIA HOSPITAL AND PROFESSOR OF CLINICAL SURGERY IN THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

(Reported by WILL. N. PRINGLE, M.D., a member of the Graduating Class.)

February 9, 1889.

THE TREATMENT OF HÆMORRHOIDS.

I have a patient to show you to-day with that very prevalent disease, namely, hæmorrhoids. Now as you know there are two principal varieties of hæmorrhoids, the internal and the external, and those two varieties have their seats in the two plexuses of hæmorrhoidal veins. The inferior plexus is situated just within the sphincter ani, and empties its blood into the illiac veins, and then through the inferior vena cava to the heart. The superior plexus is situated about one inch above the inferior plexus, and empties its blood, via the portal system, into the liver, and thence through the vena cava to the heart. The causes of hæmorrhoids is the same as that of varicose veins in any other part of the body, and that is obstruction to the return circulation; this may result from various causes, as abdominal tumor, gravid uterus, constipation, impaction of fecal matter in the rectum, being constantly on the feet, together with many other states and conditions of the system. External piles are at first the same as internal piles, but from constant congestion and by being repeatedly forced down in defecation, they become as it were strangulated in the rectum and the blood becomes organized, into forming small tumors which sometimes appear as little tags, around the verge of the anus.

It is said that man is the only animal that is subject to piles, a penalty apparently for his being in the erect posture. The treatment is palliative and curative. The palliative treatment consists in removing obstructions to the return circulation and stimulating a torpid liver when this condition exists. A favorite laxative with me is that known as Van Buren's mixture which is as follows:

R. Magnesia sulphas,
Potassii bitartras,
Magnesia carbonas,
Sulphur sublimat, āā equal parts.

Mix et signa one heaping teaspoonful in water before breakfast.

This mixture, taken in this way, keeps the bowels in a softened and moistened condition and favors peristaltic action. The curative or

radical treatment consists in operative measures. In external piles where they appear as little tumors or tags, you may snip them off with the scissors, or a scalpel; there is very rarely any hæmorrhage, and when there is it is easily controlled, as the bleeding point is under your eye. Not so, however, with internal piles; in these the vessels may be large and not so readily accessible, and patients have been known to bleed to death before these vessels could be controlled. In dealing with this form of piles we use the clamp, the cautery, or the ligature. In using the clamp, the pile is caught at its base, between the jaws of the clamp, tightly compressed, then cut or shaved off, in front of the clamp, and the cut surface or stump seared with the actual cautery; this is Mr. Smith's operation, and the clamp is called Smith's clamp. Another and a more recent operation consists in injecting the pile with carbolic acid. This operation originated among men outside of the profession, or irregulars; it sometimes acts very effectually and with so little pain or inconvenience to the patient, that the regular profession are now giving it a trial. This is not the first case, either, in which the profession has received valuable hints from charlatans. Mr. Heaton's cure for hernia, by the use of white oak bark, originated in the same class of people, and the fact that we accept and use these hints, merely shows that we, as a class, are not bigoted, obstinate, nor old fogies, but are willing to accept any thing, from any source, that offers good to our patients.

The patient requires to be prepared for this operation, the bowels should be unloaded by a cathartic the day before, and an injection should thoroughly cleanse out the rectum a few hours before the operation; the external surface should also be thoroughly washed with soap and water. I propose to inject these piles to-day with carbolic acid and the solution I prefer consists of the following:

R. Ac. carb. 5ss.
Glycerine, }
Aqua, } āā 5j. ℥

The needle is then made to pierce each pile and four or five drops of the solution left as near the centre of the pile as possible. In order to deaden the sensibility to pain which sometimes follows the injection of the acid, I will first inject ten or fifteen drops of a 4 per cent. solution of cocaine. After the injection of the cocaine, the needle is allowed to remain in the pile about two minutes, while the syringe is removed and filled with the acid solution, and again attached to the needle and the acid injected. Shortly after the injection of the acid the pile turns to a purplish or bluish color and becomes hard. A compress is applied over the anus retained by a T bandage, the patient is put to bed and given a quarter of a grain of morphia, and the pile soon shrivels up and dis-

appears. To-morrow the patient will be allowed to walk about the ward, and in a day or two can go about his business.

Some precautions are always advisable in doing this operation; after you have dilated the sphincter ani, and brought the piles into view, it is always well to pass a small sponge with a string attached into the rectum, to prevent feculent matter from coming down to interfere with the operation. It is also necessary for you to lubricate all the surrounding tissues, to protect them from any of the acid that may be dropped on them. I would also suggest that you do all as humanly as possible; do not cause your patient unnecessary pain. I think that surgeons get careless about this sometimes. I am sure that if it was their own case they would be more careful. As I said, this operation is only on trial yet. In my hands it has not yet yielded very brilliant results, and I do not believe that it is as efficient or as certain in its results as our old plan of operating.

POTTS' FRACTURE.

I have another case to show you, one of interest, and one that affords me an excellent opportunity to speak to you on the subject of Potts' fracture. This is an exceedingly common form of accident and one which you may be called on to treat during the first months of your practice. It consists of a fracture of the fibula two and one-half inches above the ankle joint, together with rupture of the internal lateral ligament and frequently the internal malleolus is fractured off and dislocated inward with the foot and astragalus. It is caused by a violent turning of the foot outward; the patient falls from a height, striking on the inner side of his foot; the foot is strongly everted and the entire weight of the body coming on the internal lateral ligament, it ruptures or fractures off the internal malleolus; the whole force is then directed against the external malleolus forcing it outward.

Now, the fibula you know, is attached to the tibia by means of the interosseous or tibio-fibular ligament. With strong pressure forcing the lower end of the bone outward, the bone is made to act as a lever, with the ligament acting as a fulcrum, and the fibula gives way and is thrown against the tibia. The bones may be forced through the skin, constituting a compound fracture, and the joint may be thoroughly disorganized, making it a compound complicated fracture. There is increased mobility; the lower end of the tibia or the internal malleolus forms a prominent projection inward. At the seat of fracture of the fibula a depression exists, as there also is where the internal malleolus is fractured off; and you will see by looking at this patient's foot that the joint has a "spread" appearance. The object of treatment is to prevent the foot from remaining everted, the tibia and fibula must be made to

grasp the astragalus and then be retained in that position. For this purpose many splints and appliances have been devised. It is not sufficient that the foot be made straight, it must be held in an inverted position. In this hospital we use the plaster dressing, and I had intended to apply that dressing to this limb in your presence to-day, but as you see, the limb is too much swollen and congested, so we will defer that operation and show you a fractured humerus.

TREATMENT FOR FRACTURES OF THE HUMERUS.

We have a patient here who had his humerus fractured by direct violence on December 7. He remained in the hospital for about four weeks, when he went about his business. Shortly afterward when alighting from a moving car he had his arm twisted, refracturing his humerus at the same place by indirect violence. I would like to say a few words here in regard to the treatment of fractures of this bone. We more frequently have non-union of fractures in this, than in any other bone in the body, and especially if it be fractured about its middle, and this, I think, is from faulty treatment, from not retaining the fractured extremities in apposition. We may be able to reduce the fracture, and we almost always do; but do we retain it in position, do we immobilize it? I think that we frequently do not. The arm is an exceedingly difficult extremity to keep perfectly quiet; patients will move the arm more or less in spite of themselves. It has long been a rule in the treatment of fractures that the joint nearest a fracture be confined, or rendered immobile; this I consider good practice in the majority of cases, but I think there are exceptions to it, and the case of a fracture at the middle of the humerus, I think, is an exception to the rule; because, if the arm cannot be kept at rest and the elbow is firmly confined, then the motion must take place at the seat of fracture; therefore I do not fix the elbow, and I believe that to be the proper treatment. This, however, only pertains to fractures of the shaft. When the fracture is through, or near the condyles, then, of course, it is preëminently necessary to fix the elbow. Acting on my convictions therefore, I propose to apply to this fracture a short anterior and a short posterior splint, and a shoulder cap.

February 23, 1889.

GUNSHOT-WOUND IN THE LEG.

I have a patient here to show you to-day, a boy of 14 years of age, who two weeks ago shot himself in the leg below the knee with a small rifle, known as a target, or Flobert rifle. He at once applied to a physician, who was evidently a sensible man, inasmuch he at once endeavored to render the wound antiseptic; but who again was not as sensible as he might have been, because he probed the wound. He did not find the ball

either, a usual result in such cases. The boy then came to the hospital and was not probed here, and the ball still remains in his leg; and as you see he does not suffer any inconvenience from it, he walks well and feels no pain. This should be a very instructive case to you, because it will serve to illustrate the folly of probing for bullets, in gun-shot injuries. A great surgeon has divided gun-shot wounds into two great classes, namely those that have been fingered, and those that have not been fingered. The greatest damage that a bullet can do is done in its passage through the body, it being surrounded by fire from the discharge of the powder and its rapid flight through the air, have rendered it aseptic, and the wound it inflicts will therefore be aseptic, and you know that the tissues are very tolerant of metallic substances; you know this from seeing us day after day inserting metallic sutures into almost any and every tissue of the body. You also know that men have carried needles, bullets and other metallic substances in their bodies for years without inconvenience. It is said that Andrew Jackson carried a bullet, received in a duel, in his body for twenty years, with little or no pain or inconvenience. You know therefore that bullets are in many cases aseptic, and innocuous, and that by probing the wound with a foul finger, or a dirty probe, you may carry germs into the wound, thereby rendering the wound septic and doing your patient irreparable damage. There are, however, cases in which it becomes absolutely necessary to remove the bullet, as where it rests in a vital part, or against a nerve. And where you do probe a wound, you should do it strictly, antiseptically, cleanse the surrounding parts, cleanse your hands and probes in antiseptic solutions and never pass a probe into a gun-shot wound in search of a bullet until you have everything in readiness to remove the ball if your probe should come in contact with it. Otherwise the information gained by probing will be lost, and you will have done an unwise act. Never do anything, until you are prepared to do everything, is a good motto in these cases.

Dr. Park, the distinguished Buffalo surgeon, relates a case of a young man, a laborer in a freight yard, being accidentally shot in the region of the nipple, a number of surgeons gathered at once and began probing the wound. When Dr. Park arrived he was assured by one of the surgeons, (who triumphantly exhibited his probe), that he had passed his probe into the man's body to the extent of three or four inches. He was asked if he found the bullet, and replied he did not. Dr. Park then suggested that they make a thorough examination of the body, and on turning the man over, they found another wound, at the lower angle of the scapula; the wound of exit of the bullet. And these surgeons had been

diligently probing for a bullet that was not in the man's body, but that had gone flying far out in the freight yard. And suppose they had succeeded in locating the ball in the body, their information could have availed them nothing, because they were not prepared to remove it. Dr. Park relates another case, of a surgeon passing a probe into a man's brain, in search of a bullet, when the information could have been of no value whatever to him, because he was not prepared to remove it, and he was already aware that it was in the brain, because brain substance was oozing from the wound behind the ear. I hope now that you all see the folly of such proceedings and not only the folly but the danger. You not only render the wound septic, but you may disturb clots and cause hæmorrhage, which may cost your patient his life. Now let me tell you the proper thing to do in these cases. First occlude the wound with some antiseptic material, cotton wool or soft cloth saturated in any antiseptic fluid, will answer the purpose very well, then if it becomes necessary to remove the ball, transport your patient to a place where you can have all the requirements and appliances for removing the ball before you begin to probe, and be sure that the ball is still in the patient's body before you do any unnecessary probing. Also bear in mind that bullets almost always deviate or are deflected from their course; do not try to force your probe in any direction, but allow it to follow the course of the wound slowly and carefully, which it will sometimes do almost by its own weight.

MEDICAL PROGRESS.

ON DIAPHORESIS IN SYPHILIS.—DR. RADESTOCK, of Geithain (Saxony), again calls attention to this subject in an article which recently appeared in the *Therapeutische Monatshefte*, where he mentions the use of decoctions from *lignum vitæ*, divers infusions, mercurial fumigations, and among others, the thermal springs at Aix-la-Chapelle and Wiesbaden. Syphilis would not improve by the sole use of sudorific means, without the help of classical treatment, but their combination with mercury or iodide of potassium appears of undeniable value, inasmuch, probably, as it favors the elimination of the specific poisons, the same as sweats in fevers or infectious diseases. We notice, for instance, that in people who perspire a great deal, as in soldiers or stokers, roseola does not last as long as in others, and even small-pox is less serious. Radestock's method consists in prescribing a hot bath of about 30 minutes duration, until the skin becomes red. To continue the perspiration tea or hot infusions are given, or subcutaneous injections of 2 centigr. of chlor-

hydrate of pilocarpine daily, as does Lewin in the Berlin Charité for medium forms of syphilis. Also vapor baths or hot-air baths might be used, which could be given while the patient is in bed, with the help of a stove invented by Dr. Friedler, and used by him in the Dresden Hospital. At first, and in grave cases, Radestock bathes his patients every day; later on, when all manifestations have disappeared, once a week; after that at greater intervals.—*Journal de Médecine de Paris*, May 5, 1889.

A NEW RAPID PROCESS OF COLORING THE TUBERCLE BACILLUS.—MR. GABRIEL ROUX communicates a new method, by Martin Herman, of Liège, which is as follows: After the cover-glass preparations have been made as usual they are dipped for one minute in the following mixture: 1. Crystal violet, 1 gr., alcohol of 95°, 30 c. c., (a few drops). 2. Carbonate of ammonia, 1 gr., distilled water, 100 c. c. (a few cubic centimetres), which is kept at the boiling point during the entire period of immersion. Then wash in water and discolor for four or five seconds in a water solution of nitric acid, 1:10 for sputa and 1:4 for sections. Then wash in alcohol of 95 per cent. and examine immediately. If a double coloring is desired, immerse for one to two minutes in the following solution: Eosine 1 grm., alcohol of 60° 100 c. c. The great merit of this new process is that it is trustworthy, and requires no especial degree of skill; it is not any more rapid, nor any more brilliant in its results than its immediate predecessors, but it is more practical.—*La Province Médicale*, May 11, 1889.

CYSTIC DISEASE OF KIDNEY DIAGNOSED DURING LIFE.—At a recent meeting of the Glasgow Pathological and Clinical Society, DR. DAVID NEWMAN showed preparations from a case of cystic degeneration of the kidney diagnosed during life, which presented exceptional symptoms. The patient, a man æt. 46, suffered from dyspeptic symptoms, headache, giddiness, persistent renal pain, and hæmaturia. The pain was first felt on the right side, and, although severe, was unattended by hæmaturia. Eleven months subsequently pain developed in the left side, with a slight tinge of blood in the urine. When he came under Dr. Newman's care the symptoms led to the suspicion of malignant tumor of the kidney; but, on rough examination, it was found that the urine contained a larger quantity of albumen than could be accounted for by the hæmaturia alone, and for the purpose of ascertaining the relative amount of hæmoglobin and albumen a careful analysis of the urine was made on twelve occasions. When the albuminuria was due to the presence of blood, the ratio of hæmoglobin to albumen was as 1.6 to 1, but as shown by the analysis, the average ratio in the twelve specimens was

as 1 to 3.6, that is to say, not more than a fifth part of the albumen present in the urine could be attributed to the blood. The microscope showed hyaline and tube casts; by obtaining separate samples of urine from the two ureters, it was ascertained that the blood came from the left kidney only. Physical examination revealed distinct swellings in both renal regions, which steadily increased in size. There was also evidence of hypertrophy of the left ventricle of the heart and increased arterial tension. The case illustrated the value of detailed estimation of the quantities of albumen and hæmoglobin in cases of hæmaturia, and also the benefits to be derived from an examination of the separate specimens of urine from each kidney. In most cases of cystic disease the symptoms were those of chronic Bright's disease, with swellings in the groins superadded; not infrequently this disease had been confounded with ovarian cystoma, and kidneys had been removed under mistaken diagnosis. In respect to surgical treatment nothing should be done. On account of the wide distribution and multilocular character of the cysts, no benefit could be expected from nephrotomy, while nephrectomy was contra-indicated, because the disease was not only bilateral, but the kidneys were the seat of chronic interstitial nephritis, so that if one were removed, the remaining one was unable to do the additional work thrown upon it. Of 16 cases of nephrectomy for cystic degeneration which Dr. Newman had collected, 6 died, 2 from peritonitis, 1 from uræmia, 2 from shock and collapse, 1 from œdema of the lungs, while 10 recovered, thus giving a mortality of 37.5 per cent.—*The British Medical Journal*, May 25, 1889.

MURMURS IN THORACIC VESSELS FROM EFFUSION OF FLUID INTO PLEURA.—DR. SIDNEY PHILLIPS, in a series of papers just published in *The Lancet*, says: A murmur is sometimes produced in the large vessels of the thorax from the rapid effusion of fluid into the pleura. The following case affords an example of this. A male patient who had been ill in bed for a month with chest symptoms, who had been repeatedly examined by several physicians, and in whom it was certain that no murmurs existed, after pleuritic friction had been observed for some days, was found to have the signs of a large accumulation of fluid in the left pleural cavity. The effusion was very rapid, the dulness in a few hours rising to the level of the spine of the scapula. The apex of the heart was felt plainly in the right axilla, and there was evidence of considerable compression of the lung. Simultaneously a murmur of great intensity was developed; it was heard beneath the sternum opposite the second and third rib cartilages, and could be traced obliquely to the left behind that bone in the second and third left intercostal spaces. Supervening suddenly as it did.

and coincidentally with the rapid effusion into the pleura, it could hardly have been the result of anything but traction upon and stretching of one of the large vessels in the thorax, and from its position and direction appeared to be produced in the pulmonary artery. That this was so was borne out by the fact that after several aspirations of fluid the chest was eventually incised, and as the heart returned to its position the murmur entirely disappeared. I have not found any definite allusion in any of the works I have been able to consult of murmurs in the arteries produced in this way, but the recognition might be important, for in cases where the patient had by previous observation been known to be free from murmur such a bruit as that heard might be readily taken in conjunction with the other physical signs for evidence of aneurism or intra-thoracic tumor.

PURE CULTURE OF THE TETANUS BACILLUS OF NICOLAÏER.—M. KITASATO, of Tokio, Japan, recalls the discovery of the tetanus bacillus by Nicolaïer, its presence in the soil, its existence in men afflicted with tetanus (Rosenbach), and claims that so far it has not been possible to obtain pure cultures of this bacillus.

A young soldier died from tetanus. In the pus of his wound the bacillus of Nicolaïer was found. Inoculation of this pus upon mice produced in the latter genuine tetanus, and the characteristic bacillus was found in them. But cultivation failed, and only mixed cultures were obtained. In examining these more closely Kitasato found by the side of Nicolaïer's bacillus, three kinds of anaerobic microbes, and seven kinds of aerobic microbes; neither the former nor the latter could cause tetanus.

The tetanus bacillus is a genuine anaerobic bacillus. After having discovered that the mixed cultures obtained from the tetanus pus contained the largest number of Nicolaïer's bacilli when the oven is kept at 36° , Kitasato exposed them for some time to this temperature, and then, the cultures being in full development, he placed them for a short time in a water-bath at 80° . This temperature kills the adventitious microbes, but lets the spores of the tetanus bacillus live. After this partial sterilization the plate-culture was kept in a temperature of from 18° to 21° , in an atmosphere filled with hydrogen. In this way he succeeded in obtaining a pure culture of Nicolaïer's bacillus, with which he was able to produce tetanus in rats, guinea-pigs, and mice. The tetanus always begins to spread from the point of inoculation. The parts surrounding the latter are always the first to be affected with tetanus.

Nicolaïer's bacillus bears heat well. It is necessary to expose it to a temperature of 100° for five minutes in order to kill it. A solution of phenic acid of 5 per cent. did not destroy at the end of ten minutes. It is remarkable that the

bacilli disappeared rapidly from the blood. It seems that they develop ptomaines there. This must be established by future experiments.—*La Semaine Médicale*, No. 18, 1889.

A NEW PTOMAIN.—HOFFA, of Würzburg, wishes a distinction made between septic intoxication and septic infection. When numerous microorganisms are found in the blood, one may speak of a septic infection. But in other microbic affections the microbes are not found in great numbers, on the contrary, they are very rare and it is almost by accident that they are found. In these cases where the bacteria disappear so rapidly from the organism, they are killed by the ptomaines which they produce, and of which various authors (v. Bergmann, Brieger, and others) have already shown us typical forms.

Hoffa repeated the experiments of Brieger. He intoxicated a rabbit with bacilli of septicæmia of mice, and prepared it according to Brieger's process, carefully excluding the urinary organs and alimentary canal from the carcass to be examined. In this way he succeeded in isolating a base which was recognized as methylguanidine ($C_2H_5N_3$), *i. e.*, as the same poison which Brieger and Bochlisch obtained with the bacilli of Finkler-Prior.

As methylguanidine originates from the oxidation of creatine, Hoffa subjected a healthy rabbit to a chemical analysis, treating it in the same way as the one infected with bacilli, and no traces of methylguanidine could be found. This base is a strong poison, of which 0.20 centigr. suffice to kill a rabbit. It is, therefore, methylguanidine which is produced by the bacilli of septicæmia, and which kills the animals. From the bacilli of rats he isolated a toxic base, of which $C_3H_7N_3$ is the formula; it is, therefore, a principle differing from methylguanidine.—*La Semaine Médicale*, No. 18, 1889.

ON COLD ABSCESSSES AFTER MALARIA.—DE SABOIA (Rio de Janeiro), in the "Bull et mém. de la soc. de chir. de Paris," T. xiv, p. 141, calls attention to a very rare exception to the rule that most cold abscesses are of tuberculous origin. He observed in 4 cases cold abscesses after acute malarial infection. After a severe malarial fever in the different patients a large number of abscesses formed within 12-48 hours, differing in size from almonds to considerable volume, without any fever, pain, or reddening of the skin; only slight tenderness to pressure indicated the formation of a new pus center. In one patient 28 abscesses had to be opened within a few weeks. A cure resulted in every case. Bacteriological examination proved the existence in the pus of the malarial microbes described by Mardrinfava and Celli. The possibility of tuberculosis was absolutely excluded.—*Centralblatt für Chirurgie*, May 11, 1889.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 66 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JUNE 22, 1889.

THE NEED OF SANITARY LEGISLATION.

It is an accepted fact that the health of a Nation is paramount to its commercial prosperity, and that when human life is imperiled thereby, even the wheels of commerce must stop. It is also an axiom that the demands of the public good are paramount to individual interests. The practical application of restraints upon business for the protection of health is often severe in its effects upon individual interests, and nothing but the strong arm of the law can make such restraints operative. Hence the necessity of municipal and of State legislation for the preservation and protection of the public health. The intelligence of the American people is such, and such their estimate of human life, that they need only to be advised as to the best means of exercising sanitary control, to strongly uphold all legitimate legislation in this direction. In fact, the progress in matters of sanitary legislation during the last few years has been in the highest degree commendable.

Until a comparatively recent period the control of matters affecting the public health was vested in the police legislation of our larger cities. More recently nearly every incorporated city in the Union has more or less perfectly developed its system of sanitary supervision. During the last fifteen years State after State has taken this matter in hand, until now, instead of a half dozen, at least thirty of the States of this Commonwealth have organized their State Boards of Health. So far as we are able to learn, the power vested in

these several Boards has been exercised, in the main, with eminent discretion. In each individual city and in each State, even in emergencies, the exercise of the powers thus vested seem ample to meet ordinary necessities.

But there are conditions in which the limitations imposed upon cities and even upon States are such as to render necessary a supervising control which reaches beyond the city, beyond the State, and can only be exercised by the authority and in the name of the Nation. We do not propose to enter upon the discussion of local or State rights as applied to the control of epidemics and infectious diseases, but we think it is manifest to all candid men, that emergencies are liable to occur at any time wherein adjacent States may find their interests conflicting, and where want of concerted action may render sanitary restrictions practically inoperative. The peril to the body politic, when a pestilence is traveling across the continent, is not limited to cities or by States. It is national in its relations, and the law that cannot be operative for its control, by reason of municipal or State limitations, is unequal to the emergency. Hence the necessity of National legislation and maintenance of a National Board of Health.

In this country power is so largely vested in the States that it becomes a matter of most careful consideration as to the proper adjustment of responsibilities and control, but we are confident that the time is at hand when such adjustments should be made. In the day of severe calamity, we shall not have time for the settlement of questions of such moment.

It is manifest that National legislation alone can meet the needs when National interests are involved, and the importance of the subject is such that the wisest measures should be thoroughly matured and made operative by appropriate legislation. Possibly a Bureau, in connection with one of the State Departments, could best assume the surveillance of the public health; of International and inter-State quarantine, of vital statistics, and of the sanitary conditions of National thoroughfares, and thus render an invaluable service to the Nation.

But the Department of Public Health should be removed as far as possible from the vicissitudes incident to politics, and those who by reason of talent, culture and fitness may be called to fill the responsible positions connected with this depart-

ment, should be so assured of a permanency as to warrant the sacrifices that such appointment might demand. The subject is not new; nor should it be allowed to grow *old* while there is such manifest need of further National legislation for the perfection of our sanitary laws.

MASSAGE IN GYNECOLOGICAL PRACTICE.

Resuming the discussion of this subject at the point where it closed in the last issue, we desire to consider, *first*, the method of treatment of uterine displacement adopted by Brandt.

Brandt's most original method of treatment, and the one indeed whose invention is no doubt rightly ascribed to him, is termed "elevation of the uterus" (German, *Uterushebung*; Swedish, *Lyftrörelser*), which may be briefly described as practiced by him in prolapsus uteri. The patient lies on a low, short, reclining chair. The physician begins by replacing the uterus, which he then supports by pressure on the cervix. He then indicates to an assistant the position of the fundus. The assistant lays his outspread hands upon the lower part of the abdomen and makes equable pressure in a backward and upward direction, taking care not to displace the uterus. This manoeuvre is repeated thrice, deeper pressure being made each time in the direction of the inguinal region. The assistant then holding his hands in a strongly supinated position, lays the tips of his fingers on the abdomen close to the edge of the symphysis and bending over the patient until his face approaches hers, he lays both hands quite flat on the patient's abdomen (one at either side of the physician's hands) and pushing the abdominal walls before him seeks to press deep down upon the cervix, taking care to keep close to the posterior surface of the symphysis. The physician next removes his external hand, while the assistant seizes the uterus from before and a little to one side and endeavors to lift it in an upward and forward direction, succeeding in which he then slowly and cautiously allows it to glide from his hands.

The height to which the uterus can be raised, depends upon the extent of relaxation of its ligaments and the degree of vaginal collapse. The uterus should be only moderately elevated at first; later on it should, in some cases, be raised to the level of the umbilicus. The uterus should be

elevated in this manner three times, with short intervals, at each sitting; after which massage of the uterus, Douglas' folds and the parametrium must be practiced. Contraindications are every acute and subacute inflammation of the pelvic organs, as well as the presence of an exudate. In prolapse the object of treatment is more quickly attained if the patient (at least in the early part of the treatment) keeps in bed and if the elevation of the uterus be practiced twice per diem; otherwise much of the results may be lost.

The next measure to be adopted, is that of pressure made a few times upon the pudendal, hypogastric and solar nerves. The object of this is to abolish all unpleasant sensations and prevent lascivious sensations.

Next in order is the forced abduction of the knees against muscular action exercised by the patient. This is regarded by Brandt and his followers, as a potent means of strengthening the pelvic floor; for the pelvic diaphragm (and especially the levator ani) is thereby excited to contraction whereby the muscular structures are gradually strengthened.

Finally, we have the stroking of the back and the tapping of the lumbar and sacral regions. The former is practiced by holding the hands together and making with the ulnar border of the little fingers short rapid strokes at either side of the spinal column from the neck to the loins and back again. The tapping of the lumbar and sacral regions is accomplished by means of the the closed hand, five strokes being made twice on either side of the lumbar vertebræ and seven strokes twice repeated on either side of the sacrum. These taps are to be made from the wrist joint and not from the elbow.

In regard to Brandt's treatment as applied to the various forms of pelvic exudates, it may be said to offer most available and valuable aid to the deplorably limited therapeutics of this department of gynecology. One writer (Dr. A. Winawer, *Centr. für Gynäkologie*, Dec. 29, 1888) who has found it most useful as an adjuvant to the diagnosis of tubal tumors, expresses himself as follows: "In cases where the tube is embedded in knotty masses of exudate and cannot be palpated even in narcosis, massage enables us to secure almost ideal relations for the examination; for when the abdominal walls are not too thick, all the pelvic organs can be palpated because, 1st,

after massage the abdominal walls are relaxed, yielding and non-sensitive, and 2d, the knotty para- and perimetritic masses, adhesions of the ovaries, etc., are dissipated, so that the parametrium becomes elastic and painless. In this wise a diagnosis of salpingitis may often be made where otherwise no definite results could be obtained even during narcosis, and where there was, perhaps, no suspicion of tubal diseases.

Such, in outline, is the Brandt method of gymnastic massage. Of the inventor and his method we find, for the most part, extremely flattering accounts, particularly in the German current literature. Prof. Schaüta, for instance, says that "Brandt is a complete master of gynecological diagnosis. I was astonished at the minuteness and accuracy of his diagnosis."

On the other hand we have, naturally enough, unfavorable reports and accounts of unsuccessful cases treated by Brandt's methods. It is unnecessary, of course, in connection with a comparatively novel and strange method of cure to point out the causes of failure; but it should be observed that Brandt himself is adapted both by nature and art for the successful pursuit of his methods. He is endowed with great muscular strength, and has an unusually powerful hand with fingers of exceptional length.

It has been objected to Brandt's methods, that they are rude and harsh; but those who have seen him at work and who have had the best opportunities to judge, do not seem to so regard them. Other objections are the length of time required in the manipulations, which will of course prevent many a busy practitioner from applying the treatment which, nevertheless, cannot readily be relegated to assistants; for all are agreed that the greatest diagnostic skill is an absolute prerequisite to successful practice in this line.

It may readily be understood that the treatment is disagreeable alike to patient and practitioner; but it is to be remembered that some of the greatest triumphs have been witnessed in cases that had proved not amenable to any other forms of treatment, short of radical operations of a surgical nature.

If female gynecologists shall prove to have the necessary physical requirements for the successful employment of the methods in question, it will doubtless afford them a wide and profitable field of useful labor.

EDITORIAL NOTES.

HOME.

THE AMERICAN EDITORS' MEETING.—Our editorial confrères are reminded that the annual meeting of the American Medical Editors' Association will be held in the Casino, Newport, R. I., on the Monday evening preceding the meeting of the American Medical Association. The title of the President's Address will be "Our Duties as Journalists and the Reforms which we should Persistently Advocate." This meeting is open to every editor or member of the editorial staff of any regular medical journal in the United States and Canada.

A CASTOR OIL TRUST is being formed, and the preliminary work has been completed. There are seven castor oil mills in the country and the business is profitable. The mills to go into the combination are the Collier and Brown and Kansas, of St. Louis; the Belleville Oil Co., of Belleville, Ill.; Baker and Burke, of New York, and a concern at Memphis. There has been a pool in existence for years, but the business is so profitable that new capital is finding its way in, and the object of the trust is to regulate competition and control the outputs.

DR. H. W. ROSE, member of the Rhode Island State Board of Health has been succeeded by Dr. Herbert J. Pomeroy.

THE PHILADELPHIA MEDICAL MISSION treated 3,220 cases last year, and held 1,017 meetings.

DR. JEROME COCHRANE, State Health Officer of Alabama, has been making a tour of investigation through South Florida and Havana, and reports that he found very few cases of yellow fever at Havana, and only one case in Florida.

DIPHTHERIA.—Dr. John Irving, in the *British Medical Journal*, supports the view that "huge collections of decaying vegetable matter," such as stable manure, may, by disturbance, generate the disease, and cites several cases to prove his assertion.

THE COMMITTEE OF ARRANGEMENTS.—The Association were exceedingly fortunate in the selection of Dr. H. R. Storer, as Chairman of the Committee of Arrangements. The Committee are also indefatigable in their efforts to formulate such plans as will inure to the comfort and entertainment of the members of the Association.

The *Newport Observer* says: "They (the Committee) have had much to contend with, but it looks now as if hereafter there will be smooth sailing. Every one will hope so, and also hope that their efforts may be crowned with success."

THE DEARBORN OBSERVATORY, recently erected at Evanston, Ill., in connection with the new Astronomical Department of the Northwestern University, and containing the great equatorial, known as the Dearborn telescope, was dedicated last Wednesday with appropriate ceremonies. The building cost \$25,000, and was donated by Mr. James B. Hobbs, of Chicago.

FOREIGN.

THE JUBILEE MEETING of the Irish Medical Association was held in the College of Surgeons at Dublin, on the 3d inst.

THE *British Medical Journal* in its issue of June 1, presented its readers with a fine engraving of the statue of Queen Victoria recently unveiled by the Prince of Wales in the Medical Examination Hall on the Thames Embankment.

A TYPHOID COMMISSION IN INDIA.—A commission has been appointed to inquire into the causes of the excessive prevalence of enteric fever among young European officers and soldiers. At present, there appears a consensus of opinion to the effect that sewage contamination is the *fons et origo* of the mischief.

SMALL-POX IN INDIA.—A serious outbreak of this dread disease is reported from Belgaum. There are 120 cases, and the vaccinators are hard at work.

A NEW HOSPITAL FOR BOMBAY.—The foundation stone of the Bomanji Edulji Allbless Obstetric Hospital was recently laid by the Governor. Dr. Edith Pechey is to preside over the destinies of this new hospital.

THE ROYAL COLLEGE OF SURGEONS AND ITS MEMBERS.—The branches of the British Medical Association are supporting the demands of the members for reform by passing the following resolutions:

1. "That this meeting sympathizes with the desire of the Royal College of Surgeons of England to take part in the management of the affairs of the College."
2. "That this meeting strongly approves of the reform of the Royal College of Surgeons of England."

The *Provincial Medical Journal* advises the

members not to allow the resolutions to remain a dead letter, but to seek the coöperation of Members of Parliament in their respective districts.

HOSPITAL FOR MEDICAL STUDENTS AT VIENNA.—*Le Progrès Médical* states that a society has been formed in Vienna to provide for the comfort of students who are ill. A hospital is about to be established for their accommodation.

AN INTERNATIONAL CONGRESS OF THERAPEUTICS AND MATERIA MEDICA will be held in Paris, from August 1 to 5. It is open to all medical men, chemists and veterinary surgeons who send in their names and a fee of ten francs. There will be two Sections—one devoted to therapeutics, the other to materia medica. Amongst other questions the following are set down for discussion: 1. Antithermia and analgesic remedies. 2. The antiseptics best adapted for each species of pathogenic microbe. 3. Cardiac tonics. 4. New vegetable drugs recently introduced as therapeutic agents. 5. Uniformity of weights and measures employed in formulæ, and the utility of an international pharmacopœa.

THE PERILS OF BOOK REVIEWING were exemplified in a suit brought in a London court about a month ago, against the publishing firm of MacMillan & Co., for an alleged libel consisting of a review of Dr. Herbert Tibbits' work on "Massage and Allied Methods of Treatment" which appeared in *Nature*. The review was a caustic one, and in it occurred this sentence: "Any one even slightly acquainted with the subject will at once perceive that its writer, while professing to teach massage, has not mastered the first principles of the subject." The plaintiff claimed \$5,000 damages. The jury awarded him one farthing; and the judge refused him his costs.

THE SANITARY CONDITION OF NAPLES.—Active measures were inaugurated last Saturday, in which the King and Queen of Italy assisted, for improving the sanitary condition of Naples. The poorest districts of the city, where the cholera epidemic of 1888 made such ravages, will be thoroughly renovated. Seventeen thousand houses will be demolished, new streets erected, and the main street will intersect the district which now contains the most pestilential dwellings. It will take ten years to complete the work.

ASSOCIATION NEWS.

Notice to Exhibitors. Correction of Errors.

In THE JOURNAL of June 1st, page 783, there was an inadvertent use of a circular copy containing errors and which was superseded many weeks ago. If our Committee had been advised that there was to be a publication of the matter in the pages of THE JOURNAL we would have provided correct copy. In the document as published "\$19.00" should be made \$23.75, and "\$20.00" should be \$25.00.

C. A. BRACKETT,
E. P. ROBINSON,
Sub-Committee on Exhibits.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting, January 30, 1889.

THE PRESIDENT, CHARLES E. HAGNER, M.D.,
IN THE CHAIR.

DR. A. A. HOELING reported the following:

I. GUN-SHOT WOUND OF THE SPHENOID BONE;
CASE AND SPECIMEN. 2. GALL-STONES.

Dr. Hoehling asked that the stones be referred to the Committee on Microscopy, as he was not certain whether they were gall-stones or concretions formed by the olive oil which the patient had taken. There being no objection the stones were referred.

DR. J. FORD THOMPSON: The case of gun-shot wound had been thoroughly reported, and there was little left for him to say, unless he opened the whole subject of gun-shot wounds, which he did not propose to do. He had had several similar cases, but death had been almost instantaneous. His last case was that of a young man on 13th street, who put the pistol in his mouth and death was immediate. Whenever the weapon is put into the mouth and fired it is not good surgery to explore the wound inflicted.

DR. LLEWELLYN ELIOT read a paper entitled

THE DIAGNOSIS OF PREGNANCY IN THE
EARLY MONTHS.

(See page 867.)

DR. A. H. HOEHLING reported

A CASE OF GUN-SHOT WOUND OF THE SKULL
MADE WITH SUICIDAL INTENT.

On December 16, 1888, there was admitted to this hospital, John H. L., a private in the U. S. Marine Corps, aged 42 years, native of Pennsylvania; enlisted in Washington, D. C., on Dec. 7, 1888, for the third time.

Diagnosis.—Vulnus sclopetarium.

Origin.—Self-inflicted, and therefore not in the line of duty. The patient was discharged on the expiration of his second term of enlistment, about twenty hours before he reënlisted, as above stated. He had been on duty at League Island, Philadelphia, and his discharge took place there. He went on a spree and was robbed of the savings of five years while intoxicated, so he came here to begin life again as a private, having last been a sergeant. His descriptive list states that he had slight cardiac hypertrophy, and we found a small goitre, with decided exophthalmos, which latter was noticed by others before he shot himself. He had never been sociable with his messmates, but had one or two intimate friends among them, and was regarded as a good soldier, faithful on duty. He admits having carried the cartridge which he used for over two years in his pocket, with some vague notion, probably not well defined to himself. There is a rumor that he once jumped overboard, but I have not traced it to confirmation. He attributes his present attempt to mental depression consequent on the abuse of liquor, and the loss of all of his money, about \$250, for which he stood many a weary watch on board ship in distant seas, and amid the swamps of the League Island Navy Yard. At the latter place he was much exposed to malaria, and had there suffered from the same. On admission to the hospital, at 8:15 o'clock, A.M., the patient was in a state of profound shock, pulse rapid and almost imperceptible at the wrist; respiration slow and labored; surface cold and blanched. Blood was oozing from his nose and mouth, and he had the appearance of having lost considerable blood. Whiskey, as well as ammonia, were at once given by the mouth and hypodermically, also ergotine, atropia sulph. et morphia sulph. hypodermically; ice was placed in his wounded mouth and hot bricks to his surface, to produce reaction, which latter was also hastened by hypoderms of sulphate of sparteine, and carbonate of ammonia by the mouth. In about an hour the patient had revived sufficiently to allow an examination of the injury. He said that he had used a Springfield rifle, charged with a "practice cartridge," which contained 5 grains of powder and will carry 100 feet with precision. In addition to the ball already in the metallic cartridge he placed two more bullets in it; he then fastened a loop to the trigger, put the muzzle in his mouth, and with his foot in the loop fired the gun off.

Dr. H. T. Percy, U. S. Navy, who was the patient's immediate medical attendant, on examining the mouth found a penetrating wound in the median line of the roof of the mouth, $1\frac{1}{4}$ inch in length, involving the hard and soft palates and extending through the posterior portion of the septum narium. The four upper incisor teeth had been knocked out and the gums back of their

alveoli torn up for the distance of $\frac{3}{8}$ of an inch; the dorsum of the tongue was slightly lacerated. As he had already been probed, without success, and hæmorrhage was feared, because of the proximity of the wound to the internal carotid arteries, the probing was not then repeated. There was not a symptom indicating injury involving the brain at this time, nor for twelve days more, so it was supposed that the bullets must have been stopped by the thick bone of the basilar process of the occipital, the amount of powder used having been too small to drive the lead through. The oozing of blood had now become slight, his respiration remained labored, phonation very imperfect, mind fairly rational, but a little cloudy. At 3 o'clock, P.M., reaction was progressing slowly, hæmorrhage under control; considerable trouble in swallowing, the food passing up into his nose; a good deal of œdema of the soft palate; can only speak in a whisper.

Treatment of a sustaining character; milk and whiskey given both by the mouth and by enema, ice kept in his mouth to retard local inflammation, as œdema of the glottis was feared. The wet condition of mouth and throat, however, had prevented much burning from the sudden flame, just as one can place a wet hand in a flame for an instant with impunity. I am surprised that the excitement of committing suicide did not dry up his salivary glands, as we know the emotion of fear will do, but perhaps he was not afraid; at all events his tissues did not appear to be much damaged by fire and the œdema of the velum pendulum palati was due to the contusion and wounds caused by the explosion and the projectiles. In the evening his temperature was taken and found to be normal.

December 17th. Patient passed a restless night; deglutition very difficult, respiration labored, owing to swelling of the soft tissues around the glottis. Mouth and nose sprayed with solution of boracic acid; hot flannels to outside of throat; ice in mouth; morphia sulph. hypodermically *pro re nata*; diet: milk, eggs, and milk-punch. Evening: temperature 99.4° F.; he had quinia sulph., 0.60, at 4 o'clock, P.M.

December 18th. Rested better last night; less difficulty in swallowing and breathing; discharge from nose and mouth very offensive, for which used solution of sodii chlorinatæ, with sponge and atomizer. Apparently doing well, continue general treatment already indicated as to diet and medicines.

December 20th. Morning temperature 101.8° F. Evening temperature 103° F. In other respects the patient appears to be doing well. He swallows with ease, respiration not materially affected, mind clear, speech improved; considerable offensive discharge from the nose. Treatment: supporting; cleansing and disinfection of the wound and its vicinity; ice *ad libitum*, as he is fond of

it, and morphia sulph. hypodermically *pro re nata*.

December 25th. Doing well, apparently; range of temperature has been from 99.6° to 101.6° F. Discharge from mouth diminished, but still offensive, and smells like necrosed bone; the wound of soft parts of the palate has a healthy look, the slough having been thrown off; the wound of tongue and gum healing kindly; tongue coated with a brownish fur; fever, of septic origin, continues. Continue general treatment as before.

December 28th. Condition about the same; fever higher at times than at last entry; palate wound not looking so well; when the wound was dressed this morning a small piece of bone was removed, supposed to be from the horizontal plates of the two palate bones. To-day he complains of headache, so we may date his brain symptoms from this time, as they did not again leave him. Continue general treatment and apply ice-bag to occipital region; he has had quinia sulph. at various times for his septic fever, and symptoms have been met as they arose with appropriate treatment, *all* of which it is not considered necessary to fill this paper with.

December 30th. Little change in the patient's condition since the last entry; he seems to be growing weaker, there is more hebetude, palate wound looks unhealthy, with no tendency towards healing, the bone is denuded within reach of the probe; and attempts to examine the wound by means of reflected light by way of the mouth have failed, because the patient is too weak to stand enough manipulation for the purpose, and his mouth is partially closed in a tetanic manner. Diet: milk, milk-punch, and eggnog. Morphia sulph. hypodermically, *pro re nata*, and quinia sulph. 0.30 *ter in die*. Cleansing the wound is now difficult, as he swallows all the liquids used, as well as his own foul discharges.

January 1st. Hebetude marked; right arm paralyzed; patient failing; he still takes plenty of nourishment and swallows freely; voice indistinct.

January 2. Losing power over the muscles of both sides; he cannot move arms or legs; has lost control of bladder and sphincter ani. He lies in bed perfectly helpless, but can be aroused and made to speak intelligently, but with difficulty; deglutition difficult. It is not easy to cleanse the wound, because he cannot spit at all and swallows the cleansing liquids and all they carry away with them. He still complains of headache. At a consultation to-day, between Dr. H. T. Percy and myself, the wound was probed for the bullets with a Nélaton porcelain-tipped probe, and though we thought we felt one we were not quite sure, and the mark of lead on the probe was not distinct. I now believed the balls to be in the body of the sphenoid bone, but this has since been found to have been a mistake, as

they were discovered after death in the basilar process of the occipital bone, at and *below* its junction with the sphenoid bone. Thinking that the lead was imbedded in necrosed walls of the sphenoidal cells we decided that we would not be justified in attempting to remove them from this dangerous site at this time, when nothing seemed likely to offer a chance of saving him, and any violence would probably kill him while he was undergoing the operation of removal. I wish to say, however, that of late years bullets remaining in the body have been regarded as too harmless altogether, and probing has been given too bad a name since counsel for murderers have learned to make the plea that probing kills their clients' victims, instead of the assassin's ball itself; a happy mean will probably correct both errors. While the patient under consideration was doing very well, we awaited some natural evidence of the location of the bullets as sloughing and exfoliation should proceed, hoping to remove them in good time, or to let them become encysted, and thus harmless. When the symptoms did come on, which showed that the lead was in a situation to do harm to vital parts, they appeared suddenly, and were of such a character that we became convinced no good could then be accomplished by trying to remove the foreign bodies from the neighborhood of important parts, with more or less violence. The diagnosis of meningitis from caries of the sella turcica, due to fracture of that portion of bone by the bullets, was made out at the consultation above mentioned, and then believed.

January 3. Patient sinking slowly; he lies in a comatose state, but can swallow food of a liquid character and stimulants. Respiration principally diaphragmatic, as the intercostal muscles are paralyzed to a great extent. Discharge from nose very slight.

January 4. Failing gradually, no other change to note.

January 5. He appeared to recognize Dr. H. T. Percy this morning when he addressed him decidedly, but lapsed into unconsciousness at once. Temperature 104° F, respirations 60 per minute, pulse 160 per minute; swallows with increasing difficulty.

January 6. Patient lies in a state of profound coma, respirations about 60, stertorous and growing shallow; temp. 102° F., pulse 160 to 180, and very weak. Fed by stimulating nutritious enemata, as he can no longer swallow. 9 o'clock P.M., failing rapidly, no pulse at wrist. Temp. 103° F.

January 7. Patient died at 2:05 o'clock A.M. Temp. at death 103° F. At 2 o'clock P.M. the autopsy was held by Dr. Percy, U. S. Navy, in the presence of Dr. J. Kerr, of this city, Drs. Woolverton and Nash, U. S. Navy, and myself. Eleven hours and fifty-five minutes after death, rigor mortis well established. Body much emaciated, marks of turpentine stupes on chest, they

having been used because of dyspnoea and signs of pulmonary affection; one mark of a small abscess on left arm from a hypodermatic injection.

In the centre of the roof of the mouth, extending antero-posteriorly, is an opening about $1\frac{1}{4}$ inch long by $\frac{3}{8}$ to $\frac{1}{2}$ inch wide, involving about $\frac{3}{4}$ inch of the bony palate and $\frac{1}{2}$ inch of the soft palate; about $\frac{1}{2}$ inch of the posterior portion of the septum narium is gone. The four upper incisors are gone, and the gum is found to be detached from their alveoli. On removal of the calvarium slight adhesions of the dura mater of the left side above the middle fossa were found; from this site pus flowed when the skull-cap was removed. When the brain was removed about $1\frac{1}{2}$ ozs. of clear fluid escaped from the spinal canal. Dura mater normal except over left middle fossa, where it was found congested, and had been detached from the bone at one portion by the burrowing of about $\frac{1}{2}$ oz. of pus, which had found its way from the basilar process and flowed to the left side across the middle fossa and to some distance up the left side of the parietal bone. The membrane over the basilar process was gangrenous; it had a bluish-black color, a foul odor, and was bulged out from its normal position.

The basilar process was found to be fractured and necrosed, and it crumbled under the knife like paper; it was dark-brown and had a very bad odor. On digging into it one ball was found, much flattened in shape, and just under it another, less disfigured. The third ball was almost of normal shape and was found a little lower down than the second one, and on the outside of the basilar process of the occipital bone, below its articular surface for the sphenoid bone. The odor in the vicinity of the inner surface of the basilar bone was that of caries, and the neighboring tissues were broken down and bathed in pus. The adjacent surfaces of the pons varolii and medulla oblongata, as well as their left sides, were covered with pus. The pia mater was intensely congested, but the brain tissue appeared to be normal on being sliced up. The ventricles had less fluid than is usually found in them. Death was due to exhaustion dependent upon general paralysis, which was caused by meningitis following necrosis of the basilar process from the gunshot wound.

The three bullets are herewith presented, as well as a cartridge such as he used, and it is still loaded; also an empty one, and the powder removed from it, 5 grs. in weight; also an unused bullet, which is $\frac{3}{8}$ inch in diameter and weighs 138 grs. avoirdupois. The three balls our patient used had a weight of 1 oz. avoirdupois in all. A service charge in one of these cartridges contains 72 grs. of powder and 138 grs. of lead; and a marine who fired one into his mouth during the last war "blew the whole top of his head off," in the words of my informant.

American Laryngological Association.

Eleventh Annual Congress, held in Washington, D. C., May 30, 31, and June 1, 1889.

(Concluded from page 854.)

SECOND DAY.—MORNING SESSION.

DR. T. AMORY DE BLOIS, of Boston read a paper describing

SOME OF THE MANIFESTATIONS OF SYPHILIS OF THE UPPER AIR PASSAGES,

and exhibited drawings showing the conditions which he had found.

DR. F. H. BOSWORTH, of New York, referred to the necrosis of bone which occurs in syphilitic ulcerations. He did not believe that syphilitic ulcerations extended from one part to an adjacent part. Such ulceration is due to the breaking down of a gummatous deposit, and does not extend beyond the limits of the original gummatous deposit. The necrosis of the bone he held to be due to the interference with nutrition of the bone caused by the original deposit, and that after the breaking down of the gummatous infiltration has taken place, the ulceration is kept up by the necrosed bone, and treatment should therefore be directed to this point. He agreed with the reader of the paper that potassium iodide was to be employed until the disappearance of the lesion, and that mercury should be used subsequently. Operative interference should be postponed until the syphilitic disease was well under control.

DR. C. C. RICE, of New York, said that in these cases there was often cicatrization and contraction above the visible adhesions, so that after the adhesions are freed, the results as regards phonation and respiration are not what would be expected. This contraction in the post nasal pharynx requires to be stretched in order to obtain good results. In regard to operations: in one case where there were adhesions, and where there had been no syphilitic manifestations for many years, he separated the adhesions with the galvano-cautery. The ulceration which followed took on an unfavorable character, and continued to spread despite constitutional and local treatment.

DR. J. N. MACKENZIE, of Baltimore, protested against the too vigorous removal of diseased bone from the nasal passages. It frequently happens that more is pulled out than is desired, and sometimes from dangerous regions.

DR. WM. H. DALY, of Pittsburgh, objected to the use of the galvano-cautery in tissues of the low vitality of syphilitic tissues. He believed that the galvano-cautery was a much-abused useful instrument. He felt satisfied that better results could be obtained in the fauces, in the nose, in the larynx, in any operation by using a sharp cutting instrument, and allowing as free hæmorrhage as is consistent with good judgment. The freer the hæmorrhage within certain limits, the

more certain is there to be immunity from septicæmia and rapid union.

DR. CHAS. H. KNIGHT, of Boston, read a paper entitled

NOTE ON THE GALVANO-CAUTERY IN THE TREATMENT OF HYPERTROPHIED TONSILS.

This paper was supplementary to one read two years ago. The galvano-cautery can not be satisfactorily used in young children, and in them the guillotine is preferable. In older children and adults the galvano-caustic point will prove of service. The galvano loop was especially considered. With this the operation can be done at one sitting. The portion removed by the loop does not indicate the real extent of the operation. A portion of the remaining tissue sloughs so that the operation with the loop was better than with cutting instruments. There seems to be very little more pain with the galvano-loop than with the guillotine. The former operation is, however, more disagreeable on account of the odor of burning flesh.

DR. T. A. DE BLOIS, of Boston, had used the electrolytic needle with good effect. Under cocaine, pain of the procedure is very slight. Half a dozen punctures each day will in a short time produce great diminution. This method is used only in adults. In children, the tonsils are very apt to diminish in size without treatment.

DR. C. E. SAJOUS, of Philadelphia, had frequently used the galvano point, but had to make as many as eighteen or twenty punctures in order to obtain satisfactory results. After the second visit the patient expresses very little objection to the operation. The galvano point is useful in the treatment of enlarged tonsils, especially where the density is not great. Here the cicatricial contraction assists in reducing the size.

DR. W. H. DALY, of Pittsburgh, believed that in the normal throat no portion of the tonsil extended beyond the line of the half arches, and in abscision of the tonsil our object should be to restore the throat as nearly as possible to its normal condition. This cannot be thoroughly done with the tonsilotome, but the operation must be completed with the forceps and bistoury.

DR. F. H. BOSWORTH, of New York, could see no reason for treating this condition by means of 18-20 punctures, when the whole trouble could be removed in a few seconds by a very simple operation.

DR. C. C. RICE, of New York, believed that there are few cases in adults where have been frequent attacks of tonsillitis, and the tonsils are greatly congested, where the galvano-cautery is of service.

DR. JOHN O. ROE, of Rochester, read a paper on **THE TREATMENT OF DISEASED TONSILS WHEN UNATTENDED WITH HYPERTROPHY.**

The conditions referred to are of marked clini-

cal importance, but their consideration is ignored by writers upon these subjects. The most common form of the disease of the tonsil is hypertrophy, and in children it is rare to find any other form. During adolescence the tonsils may diminish in size, but they do not return to their normal condition. The small tonsils in adults have often followed hypertrophy. This is a point in favor of the removal of enlarged tonsils. The two forms of disease of the tonsil to which attention was called, were, first, chronic disease of the crypts and lacunæ, and, second, fibroid degeneration of the stroma of the organ, the cicatricial form of the disease. The first is the result of chronic follicular catarrh of the tonsil, and is usually associated with chronic follicular catarrh of the pharynx. The treatment of these conditions is important, not only on account of the disease itself, but also because they are the source of recurrent trouble; and may cause reflex symptoms. Local applications are practically useless. The galvano-cautery, which is useful in the treatment of hypertrophied tonsil, may be employed here, but it is not as efficient as it is in the former condition. The treatment *par excellence* is ablation with the knife. The diseased crypts may be laid open and cauterized with chromic acid, or fused with nitrate of silver. Excision is, however, the best plan. It is rarely advisable to attempt removal of the whole mass at one time on account of the adhesions to the pillars. The use of cocaine lessens pain and hæmorrhage. In every instance in which the speaker had employed excision the cure had been perfect, with entire relief from the attendant symptoms.

DR. H. L. SWAIN, of New Haven, reported a case in which recurrent attacks of swelling of the lingual tonsil were caused by the presence of hard masses in the faucial tonsil. The attacks were subdued by treatment of the crypts, by cutting into them with the galvano-cautery, and thoroughly cauterizing their interior.

DR. J. SOLIS-COHEN, of Philadelphia, had seen many cases of spasmodic cough due to nothing but the presence of these masses in the crypts and lacunæ of the tonsil. These had been found not only in enlarged but also in apparently contracted tonsils. It is sometimes necessary to produce some gagging, so that the posterior portion of the tonsil presents, in order to discover this condition. In enlarged tonsil, the best treatment is probably excision, but in these atrophied tonsils he had pressed the matter out with a blunt scoop, and then applied a simple astringent, consisting of creosote gr. j, iodine gr. j, potassi iodide gr. v to glycerine ʒj. If this does not answer, he cuts the crypt open with scissors, and scrapes them as thoroughly as possible. This affection is not as thoroughly appreciated by the profession as it should be. He had seen cases where cough existing for five, ten, or more years had been per-

manently relieved by treating this condition.

DR. WM. H. DALY, of Pittsburgh, referred to cases in which the patients were really sick, as the result of these lacunæ becoming filled with cheesy matter.

DR. F. I. KNIGHT, of Boston, described a case of long-continued irritative cough, in which the removal of a cretaceous mass as large as a pea from a crypt of the tonsil was followed by complete cure.

DR. SAMUEL JOHNSTON, of Baltimore, referred to three cases in which the collection, instead of consisting of soft, cheesy material, was hard, looking like spirales of bone, and adhered with great intensity. These bodies were not limited to the tonsil, but were also found on the lower part of the fauces and on the post pharyngeal wall.

DR. HARRISON ALLEN, of Philadelphia, stated that he had referred to this condition in a paper published in 1882. The solid matter is retained in the crypts. This pressure is often produced by the anterior fold. Sometimes the secretion has gotten out of the tonsil, but is still retained behind the fold. More frequently these masses are beneath the tonsil, under an adventitious membrane.

DR. J. SOLIS-COHEN, of Philadelphia, reported a case of

SARCOMA OF THE THYROID GLAND.

The case was one of sarcoma of the thyroid gland, with pressure on the right sympathetic nerve; unilatent tonic spasm of the laryngeal muscles; intermittent clonic spasm of the muscles of the opposite side: There was stenosis from the pressure of the tumor. For this tracheotomy was performed. This afforded relief for a number of months. Hæmorrhage occurred twenty months later, but was controlled without much difficulty. Gradually marked disturbance of the two pneumogastriacs supervened, and there was great interference with respiration. It was accidentally discovered that any irritation of the mucous membrane of the trachea would relieve the dyspnoea, and at once the lividity of the face would disappear. This effect was readily produced by touching the posterior wall of the trachea with a bent wire, passed through the tracheotomy tube. The patient died of exhaustion.

THIRD DAY—MORNING SESSION.

DR. C. C. RICE, of New York, read a paper on SOME UNUSUAL MANIFESTATIONS OF TUBERCULOSIS OF THE LARYNX.

The first unusual manifestation referred to was where syphilis and tuberculosis of the larynx co-exist. Here the lesions of one process mark those of the other. Here the prognosis depends upon which is the more active condition. This combination is more common than is generally supposed, and probably some cases of cure of sup-

posed tuberculosis should be placed under this head. A second unusual manifestation is the engrafting on the tuberculous process of a new tissue rendering the diagnosis difficult. This new tissue may be of two forms, either a granulation tissue, or a papillomatous growth. The third condition was adhesive inflammation at the anterior ends of the vocal bands. This must be rare, as the tubercular process shows little tendency to cicatrization and healing. It is liable to occur only when the cords are immovable, and there is general proliferation of tissue. The last condition referred to was one in which the tubercular deposit in one arytenoid was the only manifestation of the disease in the larynx, the remaining parts of the larynx being perfectly normal.

DR. WM. H. DALY, of Pittsburgh, was satisfied from his experience in three or four cases, that in some instances tubercular ulceration of the larynx may be cured. In these cases there was no evidence of syphilitic disease, and in at least some of them, the tubercle bacilli were found. Recovery has followed the use of alkaline sprays and inhalations, with the free use of iodoform. He believed that tuberculous ulceration of the larynx might occur without evidences of tubercular deposit elsewhere.

DR. J. C. MULHALL, of St. Louis, thought that there might be a catarrhal ulceration of the larynx, and that this was a curable condition. He did not think it would be easy to prove that tubercular disease of the larynx was ever primary, although it is sometimes the first sign of the condition. In tubercular ulceration of the larynx he had used pure lactic acid, and had seen the ulceration heal, but he could not say that he had ever seen life prolonged to any appreciable extent.

DR. F. I. KNIGHT, of Boston, had not the slightest doubt that tubercular ulceration of the larynx does get well. He had seen such ulcers heal under alkaline sprays and iodoform, and more especially under lactic acid. He thought that it was possible to have the tubercular disease of the larynx as a primary affection, but in the the majority of cases careful examination will reveal evidences of disease of the lung. He did not regard changes in the respiratory murmur and in respiration as the most important signs of early phthisis. He placed more reliance upon the localized râles which are heard on coughing. In order to develop this sign the patient should not inspire immediately before or after the cough, but should cough after a rest. He had seen but a few cases in which he regarded the disease as primary in the larynx.

DR. W. E. CASSELBERRY, of Chicago, reported a case in which he found catarrhal ulceration of the larynx. These readily healed under cleansing treatment, and there has been no return of the ulceration during a period of two years.

DR. J. N. MACKENZIE, of Baltimore, thought

that the question of the possibility of the existence of primary tubercular disease of the larynx had been settled by examinations upon the post-mortem table, where, in a few cases, careful examination of the body revealed tubercular deposit, nowhere but in the larynx. While a tubercular ulceration of the larynx may heal, this by no means indicates the cure of the disease. I have seen the co-existence of syphilis and tuberculosis in the larynx several times, and it is difficult to say which is the syphilitic and which is the tubercular ulceration. The only test is that of treatment. He had never seen what could be called catarrhal ulceration of the larynx. In regard to treatment he thought that more harm than good was produced by the employment of harsh measures. There is a form of ulceration which occurs in the later stages of phthisis, principally near the bifurcation of the trachea, which is probably due to the corrosive action of the sputa.

DR. W. C. GLASGOW, of St. Louis, believed that tubercular ulcers of the larynx were never healed. He had seen cases of ulceration of the larynx heal under treatment, but he did not consider these to be true tubercular ulcerations. These have healed under simple treatment. He had used with great satisfaction during the past two years the peroxide of hydrogen in the treatment of such ulcerations, and under its use there is rapid healing. He did not believe in primary tubercular disease of the larynx. In all the cases that he had seen, there had been more or less disease of the lungs. In true miliary tuberculosis of the larynx he had always found some evidence of disease in the lung, and these cases, he thought, never recovered. He had seen cases of catarrhal ulceration of the larynx.

DR. S. SOLIS-COHEN, of Philadelphia, read a paper on

THE OCCASIONAL TOPICAL USE OF SOLUTIONS OF NITRATE OF SILVER IN THE TREATMENT OF CHRONIC LARYNGITIS.

The cases reported were not due to nasal disease or obstruction; nor were they those in which all topical treatment is unnecessary. Where indigestion, constitutional disease or diathesis have been present, these have received due attention. It was simply of topical applications for the relief of local conditions that he spoke. All have encountered cases of chronic laryngitis, especially in singers, clergymen, lawyers, etc., in which, after all discoverable sources of irritation, local or general, have been removed and approved topical treatment, suited to the individual case, has been faithfully tried for a longer or shorter time, improvement takes place to a certain point and then stops. Perhaps all visible evidences of disease, except an irregular, pinkish striping of the vocal bands have disappeared, or perhaps there would be a faint uniform coloration or may

be only a loss of lustre; but something there would be that persisted and that prevented the patient from resuming with comfort full use of the voice in singing or speaking, or perhaps even in ordinary conversation.

It is in such conditions as these; the last obstinate remnants of the disease, that he had derived considerable satisfaction from the topical use, by sponge, cotton wool or brush, of weak solutions of silver nitrate, about 10 grs. to the ounce, applications being made every day for some two or three days, until some congestive reaction is produced; after that at longer intervals. In the course of treatment, too, in some cases, before reaching the last stage above described, I have found recovery apparently hastened by occasionally substituting stronger solutions of silver nitrate, 40 to 60 grs. to the ounce, for the iodized glycerine, tannin, tar or other routine application. A visible increase in congestion immediately follows the use of the silver solution, but this passes off quickly, and at the next visit great improvement is usually manifested. These applications are made once in about two or three weeks according to circumstances.

DR. C. E. BEAN, of St. Paul, described two cases of

TUBERCULOSIS OF THE TONGUE,

one in a male and the other in a female. In both the disease had made extensive progress when they came under observation, and no operative measures seemed warrantable. In both there was well-marked involvement of the lungs. Death occurred in both cases a short time later. Attention was called to the differential diagnosis between tuberculosis, carcinoma and syphilis. Carcinoma is to be excluded by the absence of glandular enlargement and of the lancinating pains peculiar to that disease. The question of syphilis can only be determined by the history and by the effect of antisiphilitic remedies.

DR. J. C. MULLHALL, of St. Louis, read a paper on

THE LOCAL TREATMENT OF DIPHTHERIA.

The method of treatment which he suggested was based upon the following considerations: 1. That diphtheria is a germ disease. 2. That the specific microbe, in the majority of cases, selects the tonsils. 3. That unless checked by treatment, the colonization of these germs, results in local putrefactive changes with subsequent involvement of the general system. 4. That implication of the larynx or of the nasal passages increases the mortality. 5. That the disease is acutely adynamic. It had occurred to him that in this disease it would be better to wash out the throat than to spray it. This is accomplished by means of an ordinary syringe, and in this way the throat can be washed out without difficulty. The patient should be kept in the recumbent position,

the head being brought to the edge of the bed. This procedure is repeated every hour during the day, and at no time is a longer period than three hours allowed to elapse. The only solution that he has used has been carbolic acid with compound solutions of iodine. The water is frequently saturated with boracic acid.

The post-nasal space requires careful attention. In every case of diphtheria the nasal cavities should be kept sterile from the first. Where it is certain that the nasal cavities are not affected, the insufflation of a non-irritating, antiseptic powder may be sufficient. Where there is uncertainty or where it is certain that infection has taken place, the nasal cavities are to be washed out with a weaker solution of the same kind, not more than a teaspoonful for each nostril. For this purpose he recommended a small glass syringe with a bulbous extremity to prevent injury to the nose. After cleansing he frequently resorts to solvents, and has obtained the best results with papoid. In laryngeal diphtheria, inhalation is the only practicable method. The inhalation of the vapor from slacking lime should not be forgotten. In several cases of laryngeal diphtheria he had obtained good results by placing the patient in a small room which had been fumigated with sulphur, and by keeping water to which has been added pine tar and turpentine constantly at the boiling point.

DR. W. C. GLASGOW, of St. Louis, believed that diphtheria is a blood disease rather than a local affection, and that the only objects in local treatment are cleanliness, disinfection and loosening of the membrane. One remedy he had used with advantage was the peroxide of hydrogen by spray. It seems to act by lifting up the membrane by the formation of gas. He considered the constitutional treatment as of the most importance, and he thought the bichloride of mercury and benzoate of soda were the most successful remedies. With these he uses very simple local treatment. In the cases of severe local manifestations the method described by Dr. Mulhall would be valuable.

DR. D. BRYSON DELAVAN, of New York, referred to the value of the bichloride and cyanide of mercury, which he had used for ten years in the treatment of diphtheria.

DR. W. H. DALEY, of Pittsburg, had on previous occasions recommended the use of calomel in the treatment of this affection, and he thought that it was as efficient as a local agent as it was active as a constitutional remedy. He believed that calomel in large and frequently repeated doses—2, 3, 4 or 5 grs to children 1½ to 2 years of age—exerted a valuable therapeutic effect. He thought that a large part of the effect was from the local action upon the diphtheritic poison.

DR. HARRISON ALLEN, of Philadelphia, referred to the value of trypsin as a solvent for the diphtheritic membrane.

the contraction ring is strongly marked, and may be felt through the abdominal walls above the pubis, or even in the neighborhood of the umbilicus. This movement upward of the contraction ring is limited somewhat by the pelvic and round ligaments and by the direction downward of the abdominal pressure; and, as these restraining agents operate more efficiently in first than in subsequent labors, it is not difficult to comprehend the relative frequency of rupture in women who have borne many children. As a result of the continued retraction of the body of the uterus, the lower segment may become so distended as to form little more than a membranous covering to the foetus, and the conditions favoring rupture are established. It has been maintained upon theoretical grounds that spontaneous rupture is arrested by the contraction ring, and this is certainly the rule when there has been no art intervention; but the case in question shows that the rule has its exceptions.

Undoubtedly the popularization of Bandl's teachings has contributed greatly toward the adoption of an intelligent prophylaxis in difficult labors. The situation of the contracting ring, which, when well defined, can usually be felt through the abdominal walls, furnishes in many cases an index of the degree of the threatened danger. The risks are further increased in cross births, in hydrocephalus of the child, and in lateral and anterior displacements of the uterus, owing to the augmented pressure exerted under such conditions upon a limited portion of the already over-distended tissues. If rupture occurs under these circumstances the accoucheur cannot wash his hands of responsibility. He ought to know that the faulty uterine positions should have been early corrected by judicious bandaging, the hydrocephalic head reduced by puncture, and that, in all forms of obstructed labor, there comes a time when patient waiting ceases to be a virtue and active intervention is demanded. The new learning teaches us that when the uterine efforts have proved unavailing to fix the presenting part, and the increasing distance of the contracting ring from the pelvic brim points surely to a dangerous thinning of the uterine muscle, the physician must promptly decide upon the indicated measures of relief. These, in head presentations, are version, craniotomy and the Cæsarean section. In neglected shoulder presentations only cautious attempts at version are justifiable, and the operator should never forget to support the head with one hand through the abdominal walls in such a way as to relieve the strain upon the over-distended tissues. In case of failure the persistent use of rude force is criminal.

Dr. Lusk stated that he dwelt upon these points for the reason that he did not believe that rupture of the uterus is by any means as rare as statistics would seem to indicate. While, however, insist-

ing upon a rule of personal accountability as regards the accoucheur, he said it was necessary to recognize that to Bandl's scheme there are exceptions. Now and then cases are reported in which primary rupture has occurred in the fundus and in the body, and where the lower segment has given way without antecedent signs or warnings. Having mentioned such a case in his own experience, he went on to say that rupture may be complete or incomplete. In the latter the tear is confined to the muscular structures, and the peritoneum remains intact. In most instances the hæmatoma resulting from the bleeding vessels dissects up the peritoneum for a certain distance beyond the tear. In the complete form the peritoneum likewise gives way, but to a less extent.

When the shock, the sudden stoppage of the uterine pains, the recession of the presenting part, the bloody discharge, the lateral tilting of the fundus, or its apparent disappearance in the case of the passage of the entire child into the abdominal cavity, have led to a diagnosis of rupture, the first indication for treatment is the speedy removal of the child. In selecting the manner for accomplishing this the important consideration to be kept in view is that it shall to the least possible extent increase the dimensions of the rent. In general terms he said it might be stated that with an undilated cervix, or in cases of extreme pelvic contraction, or after the passage of the head and arms through the rupture, and in all cases where the child passes entirely into the abdominal cavity, laparotomy is the more conservative measure. There is not only less shock, but the opening of the abdomen enables the operator to remove effused blood and amniotic fluid from the peritoneal cavity. Still, the not uncommon impression that the ruptured uterus furnishes a promising field for abdominal surgery does not take into account that, in many of the cases where laparotomy is clearly indicated, the patient is practically moribund.

The employment of the suture to close the uterine wound, in view of recent Cæsarean successes, seemed reasonable; but it was to be borne in mind that with ragged borders infiltrated with blood, with the peritoneum stripped off, and sometimes with air infiltrated into the subperitoneal connective tissue, the conditions for version are in no way comparable to those which exist in Cæsarean section. The Porro operation, he thought, promised better results, though the deep situation of the tear would make it difficult to secure a healthy pedicle. There should, however, be no hesitation about suturing the peritoneal surfaces; as the rupture is thus converted into an incomplete one, with its more favorable prognosis.

When the child could be removed by the natural passages without increasing the extent of the rupture, and when the latter was confined to the lower segment, he considered laparotomy of doubt-

ful value. In many such cases recovery, as far as life was concerned, had been secured by the employment of antiseptic irrigation and filling the gap with antiseptic gauze. At the same time drainage should be secured by means of iodoform wicking or the bent rubber tube; both drainage and packing being most effective when the tear is situated in the posterior wall. This plan of treatment is, of course, only useful where no infection of the abdominal cavity has taken place at the time of the rupture, and the best results are obtained, therefore, in cases of complete rupture. At the same time that drainage is used, compression of the fundus and body should be employed by means of the hands through the abdominal walls, and in case of hæmorrhage efficient aid can be furnished by pressure made upon the aorta. Finally, a carefully graduated compress should be placed around the uterus in order to maintain firm contractions. For this purpose he prefers the disc-shaped hydrostatic bag, partially filled with water; and in this condition and in all forms of post-partum hæmorrhage he has found it most effective.

Dr. Lusk also reported for the first time an interesting case of Cæsarean section, which unfortunately terminated fatally. The patient had a contracted pelvis and kyphosis, with an abscess from which there was a large accumulation of pus under the psoas muscle, and he expressed the opinion that if in this instance he had performed the Porro operation, and thus by removing the uterus relieved the pressure upon the intestines and other structures, the patient's life would have been saved.

The first regular paper was an elaborate one by Dr. T. M. Manley, of New York, on *The Genesis of Tumors*; after which Dr. F. E. Martindale, of Staten Island, read the *Report of a Case of Calcification of the Cardiac left Ventricular Wall, following Subacute Vernicose Endocarditis*. The patient, a man 73 years of age, was suddenly attacked, April 13, 1886, with intense pain in the precordial region, accompanied by cold perspiration and dyspnoea, with a sense of impending dissolution. Dr. Martindale first saw him on April 15, when he made a diagnosis of subacute endocarditis, with circumscribed pericarditis at or near cardiac base. The etiology was obscure, as there was no history of either acute or chronic rheumatism, or nephritis, or of any exanthematous disease since childhood. From a careful inquiry into the previous history of the patient it was learned that in June, 1873, he had had a somewhat similar attack of cardiac trouble, though the exact nature of it could not be ascertained. He improved satisfactorily under treatment, but May 3d there occurred an embolic infarction of the right radial artery, and it was several months before the effects of this entirely passed away. Subsequently the patient had two attacks of marked dyspnoea, with pain in both legs and

œdema of the feet and ankles. By August 1st his general health and the distressing symptoms from which he had been suffering were greatly improved; but the auscultatory signs pointed to a chronic mitral insufficiency, and it was now clear that even should he survive for any length of time, he would labor under a permanent cardiac disability, with more or less remote compensatory hypertrophy and dilatation, and the functional disturbances resulting therefrom. In December œdema of the feet reappeared, and by the following July the œdema had extended to the middle of the thighs and implicated the scrotum and prepuce, while dyspnoea had again become so serious as to render the recumbent position impracticable. By the middle of September the anasarca had become general, and October 23d the patient died from œdema of the lungs.

At the autopsy the apex of the heart was found to be drawn backwards and firmly attached to the middle lobe of the left lung; the adhesions involving the two layers of pericardium and pleura. The left ventricular wall had undergone calcareous degeneration, and was very thin at this point. There was considerable hypertrophy and dilatation, but no valvular lesion was found, with the exception of a single tendinous spot on one of the mitral folds, if that could be regarded as such. The original diagnosis was at fault, therefore, only in attributing the apex murmur to a mitral stenosis, rather than to a roughened and unyielding endocardial surface.

In reviewing the history of this case, Dr. Martindale first put the inquiry, Was the initial attack in 1873 an endo- or pericarditis, and to what degree were either or both attacks concerned as factors in the subsequent calcification? Although the history did not make this apparent, he said, there must have been an etiological factor behind the first attack, since all authorities agree that primary idiopathic pericarditis is of extremely rare occurrence. In regard to primary endocarditis, also, there is absolutely nothing of a positive character known. We were therefore forced to the conclusion that the cardiac disability of 1873 must have had its origin in either a rheumatic or an exanthematous lesion at so early a period in the patient's life that it produced no permanent impression. There could be little doubt, he thought, that the first lesion, in 1873, was a circumscribed pericarditis, with a possible implication, to a limited extent, of the muscular tissue of the heart. Upon a careful examination of the specimen he said it could be seen that the endocardial surface of the calcified ventricular wall was smooth and polished, while the myocardium was the chief seat of the calcareous deposit; which further tended to substantiate the view that the disability of 1873 started as a pericarditis, but that the myo- and endocardium were not seriously implicated until the recurrence of 1886; for it

was hardly possible that the pathological conditions of the latter date could have existed thirteen years without any subjective symptoms.

For the embolic infarction of the radial artery he said there was needed no more reasonable hypothesis (assuming the myocardial lesion existing at this period to have been a sequence of the secondary pericarditis of 1873), than that the left ventricular pericardium was at this time attached by circumscribed adhesions to the left pleura; its contractile power being restricted not only by this, but by the gradual degeneration of the cardiac muscular tissue as well. The blood current through the left ventricle must have been churned, as it were, by the irregular and imperfect contraction of its normal muscular fibres upon the dense and non-contractile myocardial wall; and from this resulted, no doubt, the formation of a small coagulum and its subsequent location at the seat of radial infarction. As to the possible agency of sepsis in the causation of cardiac embolism, as illustrated in this case, Dr. Martindale, after referring to several modern authorities, stated his conviction that it was clear that nothing positive could be affirmed regarding sepsis as an etiological factor in the remarkable tissue metamorphosis observed in this specimen.

The last paper of the morning session was by Dr. T. H. Allen, of New York, on *Traumatic Pelvic Cellulitis*. This cellulitis, he said, was always associated with a unilateral or bilateral laceration of the neck of the uterus, and much more frequently with the former, because this was almost always deeper than the bilateral tear. He did not believe that in every case of laceration the involution of the uterus is arrested, but numerous examples of subinvolution associated with laceration had led him to consider the relation of cause and effect to be positive and direct.

Having reported in detail six cases in which he had performed the operation of trachelorrhaphy with very successful results, he went on to say that it should not be inferred from these that he was prone to operate in laceration complicated with cellulitis. This he would do only in exceptional instances. The opinion of the best gynecologists, he believed, was expressed in the following extract from a paper read by Dr. C. C. Lee, in 1881: "When any decided inflammation exists about the uterus, or so long as any tenderness can be detected in the neighboring connective tissue, it is unsafe to operate." Dr. Bache Emmet, in an article in "The American System of Gynecology," had, however, remarked: "In other cases the indurated and sensitive angle of laceration will be very marked and easily detected from the first, and in these cases there can be no question as to the necessity of removal of such a foreign body as a cicatrix." In this statement he thought Dr. Emmet had touched the keynote of the treatment; for he believed that this foreign body was the

cause of the coëxisting cellulitis. There was a limited class of cases in which the use of copious intra-vaginal injections of hot water and other well directed local as well as general treatment might improve, but not cure, a coëxisting cellulitis. This class of cases broadened the field for trachelorrhaphy, and to it Dr. Allen said he had given the designation "traumatic pelvic cellulitis," to distinguish it from the more diffuse form of pelvic inflammation. It was primarily caused by a wound—a tear—and nature in her unassisted efforts to repair the loss of continuity in the uterine neck built up a structure histologically different from the adjacent tissue, which operated in the same way as a foreign body. The operation of trachelorrhaphy removed the cicatricial tissue and completed the sphincteric arc of the circle with tissue identical in character; while it also had the effect of relieving, by the bleeding caused by it, the congested blood-vessels and lymphatics, and of imparting a new impulse to the process of nutrition. In concluding, Dr. Allen recapitulated his points in the following propositions:

1. Lacerations of the cervix uteri may result in the formation of cicatricial tissue, which produces chronic traumatic pelvic cellulitis.

2. In a limited number of these cases local or general treatment, or both, will not subdue this inflammation and pain.

3. Such treatment having failed, trachelorrhaphy may be performed successfully.

4. The dense mass of cicatricial tissue operates similarly to a foreign body, and its removal by Emmet's operation is a logical remedy which precludes the possibility of its reformation.

At the afternoon session Dr. J. A. Wyeth gave an analysis, with comments, of a number of important surgical cases recently treated by him. They comprised suprapubic lithotomy and other operations upon the bladder, ligation of arteries for various conditions, amputations, and resections of the knee-joint. In regard to suprapubic lithotomy, he said that after a career of varying fortune, in which it was at some times unduly lauded and at others entirely abandoned, he believed this operation had now attained a secure position which, on account of the improved facilities at the command of the modern surgeon, it would maintain permanently in the future. He also mentioned the various conditions in which it was applicable and in which it was, in his opinion, decidedly preferable to perineal section.

After some discussion of Dr. Wyeth's remarks Dr. J. G. Truax read a paper on *The Treatment of Acute Lobar Pneumonia* (see THE JOURNAL of June 29).

Dr. Alfred L. Carroll said that there could be no doubt that in many cases of pneumonia the need of arterial sedatives was manifestly indicated, and of all arterial sedatives venesection was the most powerful. There was, however, in addition

to the two classes of cases mentioned in the paper, a third class in which stimulus was urgently demanded on account of the feebleness of the patient; and which was well represented in the average seamstress of the city, for instance. In the second class mentioned by Dr. Truax there was danger of asphyxia; or, in other words, of the patient's drowning in his own fluid. In such cases he did not think any intelligent physician at the present day was afraid of drawing blood from the arm. The lungs were engorged with blood and the heart's action embarrassed, and venesection did not cure the pneumonia, but simply removed an obstruction. It was not, therefore, to be regarded as a curative; and in many instances other artificial sedatives were sufficient to secure the desired end. When these other sedatives failed it was unquestionably the physician's duty to resort to the lancet. The albuminuria spoken of by Dr. Truax as occurring in many severe cases of pneumonia was an indication of the venous congestion met with everywhere in the system.

Dr. E. R. Squibb inquired whether Dr. Truax had ever used *veratrum viride*, the old substitute for venesection, which often accomplished what venesection would in cases where the latter was inappropriate. He also asked whether Dr. Truax knew that he could get antifebrin (the use of which was advised in the paper) for half the money if he bought it under its other name of acetanilidine. The name antifebrin had been patented simply for the purpose of making money.

Dr. S. J. Murray said that by giving *veratrum viride* in doses of from $\frac{1}{2}$ drop to 2 drops every half hour he had never met with any difficulty in reducing the temperature. He was in the habit of carrying the drug to the extent of producing nausea; when he gave Dover's powder, and afterward stimulus, if it was required. Personally he much preferred *veratrum* to venesection, and he would certainly give it a trial in any case before he resorted to bleeding.

Dr. C. S. Wood said that in former years it was often noted that *veratrum viride* and antimony had a marked effect if they were administered after the patient had been bled, but did not exert their appropriate action if given before venesection. He was firmly convinced that, in the class of cases described by Dr. Truax, there was nothing that could compare in efficiency with bleeding.

In closing the discussion Dr. Truax said that he entirely agreed with Dr. Carroll that in feeble patients stimulants were demanded, and it was his practice to use them freely whenever they seemed indicated. In reply to Dr. Squibb he stated that he had often tried *veratrum viride*, but cases were sometimes met with in which neither it or any other agent would take the place of bleeding.

P. B. P.

The Best Climate for Consumptives.

Dear Sir:—It is with pleasure I have read the recent comments in THE JOURNAL, upon the best climate for consumptive patients, and thinking that perhaps the conclusions arrived at after spending nearly a year in this land of sunshine, may, in their humble way be of interest to some members of the Association, I send them to you.

Albuquerque is situated near the head of the fertile valley of the Rio Grande, is nearly five thousand feet above sea level, surrounded by mountains and highlands, which act as barriers against cold winds and blizzards. The soil is a sandy loam, the water pure and good. There being no station of the signal service here, I am unable to obtain a correct record of the temperature. The nearest station is at Santa Fé, two thousand feet higher, and sixty miles farther north. A fair comparison cannot be made. The winter temperature at Santa Fé and Las Vegas is considerable colder than at this point. Imagine the seasons as you have them in Illinois with the months from November 1 to the last of March taken out, and those remaining extended to fill the gap, with no oppressive heat and hot nights, little rain except in August and September, very few cloudy days, a bracing balmy atmosphere, and you have an Albuquerque climate. Twice during the winter the thermometer registered at zero; only three times has snow fallen in the valley, to melt and disappear in a few hours, except once when it remained a day or two in shady places.

The whole winter with these exceptions, has been like one long eastern October, with just enough frost during the night for a tonic. At this altitude the air is pure and stimulating, free from poisonous germs. There is an abundance of good sunshine, and the cool mountains in which to spend a delightful summer reached by a beautiful drive of twelve miles on the mesa.

The improvement in health of many has been almost miraculous. Those narrow chested individuals with a general debilitated appearance, rarely fail to have their chests expand and become strong and robust, at this altitude. Those who come here, in the first stages of consumption, with but a slight softening of the lung tissue will in all likelihood be cured. Those patients with small cavities in their lungs may be sure of being greatly benefited. Where there is extensive tubercular deposit with a large amount of broken down tissue, length of days may be added to their lives; some seem to regain their strength and live for years.

Those patients with a hæmorrhagic tendency, and those in the last stages of consumption ought not to come into these high altitudes too suddenly; they should be sent around by way of El Paso, Texas; slowly working their way up the valley,

until they have reached a locality, where improved health is assured. Patients who come here for their health must come with the expectation of staying four or five years, if not the remainder of their lives. Many that come, are to all appearance cured or greatly benefited, then go back to their old homes in the east, only to have a relapse, returning to Albuquerque when it is too late.

Climate will not do every thing. Too often those who go away from home in search of health, violate all hygienic rules. I have seen invalids, in the name of exercise do that which would make a strong man weary. I have known young men, in the last stages of consumption, spending their time in "riotous living," after leaving home and dear ones, in search of a new lease of life. The physician's duty does not cease with simply advising their patients to make a change in climate. Lay down rules for them to follow, instructing them to take a moderate amount of outdoor exercise, spending as much of their time in the open air as is consistent, enjoying their winter evenings indoors, at some pleasing occupation or amusements that are not debilitating; tell them to forget self; impress upon them that "care to our coffin adds a nail no doubt, and every grin so merry draws one out."

I am often asked: "What effect does the New Mexico climate have upon rheumatic and other diseases?" The larger proportion who come to this region suffering from rheumatism find a complete cure; a few obtain no relief. My theory now is that those who come from the States along the Great lakes, where the air is laden with moisture, will be greatly benefited by a sojourn here, but those from Kansas, Nebraska and States of a dryer clime will not receive the good expected. My opinion may change with time. Many dyspeptics are cured by coming here. Those who are suffering from the moist form of catarrh find great relief. Cancerous troubles are almost unknown.

CHARLES E. WINSLOW, M.D.

Albuquerque, N. M., May 11, 1889.

NECROLOGY.

Dr. Daniel W. Hand.

Dr. Daniel W. Hand, of St. Paul, Minn., died in that city June 1, in his 55th year, of uræmia. Dr. Hand was born at Cape May Court House on the 18th day of August, 1834. He was a graduate of the University at Lewisburg, Pa., and subsequently graduated in medicine at the University of Pennsylvania with high honors. Dr. Hand went to St. Paul in March, 1857, where he practiced his profession until July, 1861, when he volunteered his services and was appointed assist-

ant surgeon to the 1st Minnesota Regiment; he was afterwards, by examination, appointed Brigade surgeon. At Fair Oaks his horse was shot from under him, and he himself was wounded. May 18, 1863, he was captured and lodged in Libby Prison, was, however, soon exchanged and transferred to Newbern, North Carolina, and for two years from August 11, had charge of the medical department of the State. While medical director he rendered important services during a serious small-pox epidemic, which his quick action and stringent hygienic measures effectually checked.

In the month of September, 1864, yellow fever broke out at Newbern; between September 6, and November 1, over 1,200 citizens perished, including eleven of the assistant surgeons. Dr. Hand alone escaped until the epidemic had almost subsided, when he also was stricken down. His recovery was rather a rapid one, but unfortunately left him with the kidney trouble which was the final cause of his death.

In 1865 he was mustered out of service with the rank of Colonel. He soon returned to St. Paul, where he practiced medicine until his death. His death will be lamented by a large circle of friends and patients. The profession loses in him one of its most prominent members. He was always at the head of any undertaking to better the standing of the profession in his State, was for a long time a member of the State Examining Board, for many years President of the State Board of Health, he had the welfare of the people always at heart. He was a member of the American Medical Association. His many kindnesses to the younger members of the profession, his uniform cordiality to the older, and his professional ability, made him the foremost of the consultants of the State.

Scientific, conscientious, affable, energetic, he was an ideal physician honored and beloved by all.

Dr. Ellen A. Ingersoll.

Ellen A. Ingersoll, M.D., was born in Canton, Ill., April 24, 1844. She attended school in her native city until 1865, when she entered Dio Lewis' school at Lexington, Mass., where her interest in the science of medicine was awakened. Her medical studies were begun in 1872 with the late Dr. G. W. Wright, of Canton, and took her first course of lectures at Keokuk, Ia. She entered the Woman's College at Philadelphia, and graduated March 13, 1874, after which several months were spent in the Woman's Hospital of Philadelphia and in the New England Hospital of Boston as resident physician. She returned to her native city fully equipped for practice, and gained the confidence and respect of her colleagues, as well as that of the community at large.

She never failed to respond to the call of suffering and gave freely of her highest powers in administering to the poor. She became a member of the Illinois State Medical Society in May, 1875, and of the American Medical Association three years later, and was appointed several times to represent the State Society in the annual meetings of the Association, and was a delegate elect to the convention of that body this year, 1889. Some papers of great merit were read by her before the Society, and one year she acceptably filled the chair of Vice-President. On Thanksgiving Day, November 29, 1888, she died from heart failure after a surgical operation.

By the death of Dr. Ellen A. Ingersoll the Illinois State Medical Society and the medical profession have been deprived of a most valued member, one whose devotion to its principles and practice was characterized by the highest regard for professional honor. The medical women have lost one of the most noble and gifted of the sisterhood.

C. S.

BOOK REVIEWS.

DISEASES AND INJURIES OF THE EAR. By CHARLES H. BURNETT, A.M., M.D. Philadelphia: J. B. Lippincott & Co. 1889.

This little book of 154 pages is one of a series known as "Practical Lessons in Nursing." It is free from technical terms, and written so as to be perfectly intelligible to the non-professional; containing clear descriptions of the various affections of the ear; their causes, and relations to other diseases, so that they may, if possible, be avoided; but if contracted, their early recognition will prevent experimental and erroneous forms of treatment. Therapeutically its aim has been to show the inexpert what to avoid in the treatment of ear diseases, rather than what they may try to do for their relief. In speaking of diseases of the middle ear, the author has a few good words in regard to the use or rather the abuse of quinine, which is often taken in large doses to abort a "cold in the head." Nothing in fact is more likely to bring on a disease of the ear, which might otherwise escape than large doses of quinine. It causes congestion of the mucous membrane of the middle ear at a time when the predisposition to inflammation in that locality is intensified by the condition already existing. Those portions of work devoted to hygienic management are good.

MISCELLANY.

THE NEWPORT MEETING ENTERTAINMENTS.—Delegates are reminded that the ladies accompanying them

are invited to all the entertainments provided. The afternoon entertainments are intended more especially for the ladies, and those delegates who are chiefly seeking mental rest.

Tuesday Afternoon, June 25.—Excursion to U. S. Torpedo Station, Goat Island. By invitation of the commanding officer, Captain C. F. Goodrich, U. S. N. A practical demonstration of the explosion of torpedoes will be given at 4:30 p.m. Lt. J. C. Wise, Surgeon U. S. N., of the Committee of Arrangements, and Medical Officer of the Station, will introduce the visitors. Government steam launches will leave the ferry wharf at 4 p.m., and every few minutes thereafter.

Tuesday Evening, June 25.—Reception at Music Hall, and Celebration of the 25th Anniversary of the Foundation of Newport, under medical auspices, 8:30 to 11 p.m. Dr. Francis H. Rankin, President of the Newport Medical Society, and Secretary of the Newport Board of Health, will preside. Addresses of welcome will be given by Hon. Thomas Coggeshall, Mayor of Newport, on behalf of the citizens; and Dr. Henry E. Turner, President of the State Board of Health, and Ex-President of the Rhode Island Medical Society, on behalf of the Newport profession. (A brief address had been promised by Hon. Francis Brinley, President of the Newport Sanitary Association, but upon June 14, at the venerable age of 89, he has deceased.) An oration will be delivered upon John Clarke (1609-76), the physician, clergyman and statesman, who procured the charter for Rhode Island from Charles II, in 1663, and who has been immortalized as "The Founder of the Civil Polity of Rhode Island," upon the marble slab erected by the Newport Medical Society, at the Historical Society's Hall, by Hon. William P. Sheffield, late of the U. S. Senate. There will be music by the celebrated Fort Adams band, kindly offered by the commanding officer of the Fort. After the addresses the seats will be cleared away, and an informal reception will be held.

Wednesday Afternoon, June 26.—Excursion to U. S. Naval Training School, Coaster's Island. By invitation of Commander F. J. Higginson, U. S. N., in command of the station, a battalion drill of the boys of the school will be given at 5 p.m., and opportunity to inspect the U. S. training ship "New Hampshire." Lieut. J. L. Neilson, Surgeon U. S. N., of the Committee of Arrangements and medical officer of the station, will introduce the visitors. Government steam launches will leave Commercial wharf, north side, at 4 and 4:30 p.m. Those who prefer, can reach the island by carriages, via the causeway at end of Third St.

Wednesday Evening, June 26.—Vocal and instrumental concert at the Opera House, at 8 p.m., under the direction of Dr. T. A. Kenefick, chairman of the Sub-Committee of Entertainments.

Thursday Afternoon, June 27.—Excursion to Fort Adams. By invitation of the commanding officer, Col. John Mendenhall, U. S. A., there will be a light battery drill at 5:30 p.m. Major S. M. Horton, U. S. N., Post Surgeon and of the Committee of Arrangements, will introduce the visitors. Government steam launches will leave Ferry Wharf at 4:30 and 5 p.m. The fort can be reached, if preferred, by carriage.

Thursday Evening, June 27.—Promenade concert, and reception by the Newport profession, at the Ocean House at 8 p.m. Music by the band of U. S. ship "New Hampshire," kindly offered by Commander Higginson, U. S. N., for the occasion.

Friday Afternoon and Evening, June 28.—Excursion upon Narragansett Bay, and clam-bake, at the invitation of the Rhode Island Medical Society. Dr. John W. Mitchell, of Providence, President of the State Society, will receive in behalf of the hosts of the festival, and will bid God-speed to the parting guests.

LAKE COUNTY (ILL.) MEDICAL SOCIETY.—The Sixth Annual Meeting of the Lake County Medical Society was

held Thursday, June 6th, in the Waukegan Court House, the profession of the county being well represented. Dr. Tombaugh, the retiring President, gave an interesting address upon "The Use of Opium in Labor," which was followed by a general discussion. Dr. Carter reported as delegate to the Illinois State Medical Society. The following officers were chosen for the ensuing year: President, Dr. Wm. Sweetland, Highland Park; Vice-President, Dr. F. C. Knight, Libertyville; Secretary, Dr. A. C. Haven, Lake Forest; Treasurer, Dr. Beatrice Pearce, Waukegan. Drs. Beatrice Pearce, Marie F. Barry, J. M. G. Carter and F. C. Knights were chosen to read papers at the next session of the Society, the first Thursday in September.

OBITUARY.—Dr. James Ethelbert Morgan died recently at his residence in Washington, D. C., aged 64 years. Dr. Morgan was a native of St. Mary's County, of the old Maryland family of that name, and was a graduate of Sangston College. Dr. Morgan, shortly after his graduation over forty years ago, settled in South Washington, when that portion of the city was but a few hamlets united only by pathways across the commons, and it may be said he grew up with that section. He represented the old Seventh Ward several years in the Council and served a number of terms on the Board of School Trustees, and was for some time an active member of the old Board of Health. In his office he had as students Dr. C. V. Boorman, Ham, Leech, S. P. Fenwick and others, who succeeded to his South Washington practice when he moved to his late residence on E street, some ten or twelve years since. He also has three sons in the profession.

Dr. Morgan made no pretensions to that kind of charity which is seen of men, but the recipients and his intimate friends know that quietly he did a great deal to relieve suffering outside of his medical duties. Like Dr. Borrows, the deceased took much interest in local military affairs. The doctor was greatly loved, and his death is universally regretted.

DANGERS FROM CONSUMPTIVE FELLOW-TRAVELERS.—In the *Illustrated Med. News*, March, 1889, p. 294, attention is drawn to the danger run from traveling with consumptive patients. There is strong evidence that on board ship it is very easy for husband and wife to communicate the disease to one another. It is even possible for a healthy person to become consumptive if sharing the same cabin as anyone known to have the disease. On board ship there is often a great deficiency of fresh air, and the cabins are badly ventilated, to say nothing of the danger of taking the poison from the upsetting of utensils which contain sputum. The danger of traveling with infected fellow-passengers in a railway carriage or public conveyance may be so infinitesimal as practically to be neglected, yet when one is brought into contact with an infected individual for a considerable length of time, and more especially when the air which the infected and non-infected individuals are forced to breathe is neither large in quantity nor good in quality, the danger is undoubtedly a real one, and it is to be hoped that means will be taken to prevent the spread of so fatal a disease in this manner.

LETTERS RECEIVED.

Dr. J. Edwin Michael, Baltimore; Dr. J. Llewellyn Eliot, Washington; Dr. J. G. Truax, New York; Miss Emma Carter, Waukegan, Ill.; Dr. J. Block, Kansas City; S. M. Horton, Surgeon U. S. A., Fort Adams, R. I.; H. Soule, Ann Arbor, Mich.; Dr. Augustus P. Clarke, Cambridge, Mass.; Dr. L. Bremner, St. Louis, Mo.; Dr. Chas. Stover, Amsterdam, N. Y.; Dr. R. J. Dunglison, Philadelphia; Dr. D. J. Bell, Fort Fairfield, Me.; Dr. G. K. Dickenson, Jersey City, N. J.; Dr. J. A. Dibrell, Jr., Little

Rock, Ark.; Dr. R. F. Price, Cleveland, Ohio; Dr. Frank S. Billings, Lincoln, Neb.; Mrs. A. E. Goodwin, Rockford, Ill.; Dr. C. A. Brackett Newport, R. I.; Dr. Geo. E. Hubbard, New York; Singleton, Bonnell & Co., Chicago; Dr. H. N. Buckley, Delhi, N. Y.; Dr. Louis J. Lauterbach, Philadelphia; Dr. S. P. Ziegler, Carlisle, Pa.; Dr. W. S. Leffmann, Philadelphia; Dr. R. C. Stockton Reed, Cincinnati; Dr. T. E. Potter, St. Joseph, Mo.; Dr. A. Guthrie, Cairo, Ill.; Dr. C. L. Knapp, Mt. Vernon, Mo.; W. P. Cleary, New York; M. W. Knight, Melford, Mass.; Dr. H. M. Bracken, Minneapolis; Dr. N. P. Stair, Fort Atkinson, Wis.; Dr. A. B. Sloan, Kansas City, Mo.; Dauchy & Co., New York; Rio Chemical Co., St. Louis; Thos. F. Goode, Buffalo Lithia Springs, Va.; S. S. White Dental Mfg. Co., Philadelphia; Dr. Thos. H. Manley, New York.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from June 8, 1889, to June 14, 1889.

By direction of the acting Secretary of War, First Lieut. Philip G. Wales, Asst. Surgeon (recently appointed), will proceed from this city to the Presidio of San Francisco, Cal., and report for duty to the commanding officer of that post, reporting also by letter to the commanding General, Division of the Pacific and Dept. of California. Par. 3, S. O. 132, A. G. O., June 8, 1889. Capt. Charles M. Gandy, Asst. Surgeon, upon the abandonment of the post of Ft. Concho, Texas, will report in person to the commanding officer, Ft. Clark, Texas, for duty at that station, to relieve First Lieut. Ogden Rafferty, Asst. Surgeon, reporting also by letter to the commanding General Dept. of Texas. Lieut. Rafferty, on being relieved by Capt. Gandy, will report for duty to the commanding officer, San Antonio, Texas, reporting also by letter to the commanding General Dept. of Texas. Par. 7, S. O. 133, A. G. O., Washington, June 10, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending June 15, 1889.

Asst. Surgeon O. D. Norton, ordered to the Naval Hospital, Chelsea, Mass. P. A. Surgeon J. H. Hall, detached from the Naval Hospital, Washington, D. C., and granted six months' leave to go abroad. P. A. Surgeon D. O. Lewis, detached from the Naval Academy and to Hospital, Washington, D. C. Surgeon Geo. A. Bright, detached from the Navy Yard, Norfolk, Va., and wait orders. Surgeon R. A. Marmion, detached from the receiving ship "Franklin" and to Navy Yard, Norfolk. Surgeon D. N. Bertollette, ordered to the receiving ship "Franklin." Medical Inspector B. H. Kidder, ordered to the Naval Academy, Annapolis, Md. Medical Inspector T. C. Walton, detached from the Naval Academy and to the U. S. S. "Chicago." P. A. Surgeon H. G. Beyer, ordered to the training ship "Portsmouth."

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending June 8, 1889.

P. A. Surgeon F. W. Mead, ordered to examination for promotion. May 31, 1889. P. A. Surgeon P. M. Carrington, to proceed to Johnstown, Pa., on special duty. June 3, 1889. P. A. Surgeon W. P. McIntosh, when relieved at New Orleans, La., to proceed to San Francisco, Cal., for temporary duty. May 29, 1889. Asst. Surgeon A. C. Smith, relieved from duty at Louisville, Ky.; ordered to Marine Hospital, New Orleans, La. May 29, 1889.

THE Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII.

CHICAGO, JUNE 29, 1889.

No. 26

ORIGINAL ARTICLES.

SURGICAL REPORTS.

Read before the Chicago Medical Society, May 6, 1889.

BY CHRISTIAN FENGER, M.D.,
OF CHICAGO.

It is hardly proper to call this a paper, as it is simply the presentation of specimens, with a few remarks.

I. RUPTURE OF THE KIDNEY.

I will commence with the case of rupture of the kidney, which was as follows: Otto Lehmann, 20 years old, from Rockford, Ill., came into my hands February 3, 1888, and gave the following history: He had always been strong and healthy until about a year ago, when the following accident occurred: While walking along a wooden sidewalk built about 5 feet above the ground, he stepped over the side and fell to the ground. He experienced the most violent pain in the right lumbar region, had to be carried home, and any attempt to move him aggravated the pain. There was some blood in the urine for perhaps a week, after that time the urine became normal; nevertheless he lost greatly in flesh and strength, the pain in the right side remained and a swelling formed. When I saw him, a year after the injury, he was pale, somewhat emaciated, and in the right side there was a fluctuating swelling reaching from the ribs to the pelvis and to the median line. His temperature was 101° , showing some fever all the time. An exploratory puncture showed this swelling to contain urine, which was slightly turbulent and contained a few pus corpuscles. The operation was lumbar incision and drainage, 1 quart of fluid was evacuated from the swelling. But the fever remained and after several weeks even increased, the temperature varying from 101° to 103° , with profuse sweats and progressive emaciation. I concluded then that suppuration or sepsis was going on, that the most natural location of that sepsis was the tissue of the kidney, and I resolved on extirpation.

I extirpated the kidney on April 12 by the usual lumbar method and T-shaped incision. At that time there was found, besides the kidney, which is here presented, a large abscess cavity ex-

tending up towards the diaphragm and down in the large pelvis. After the operation the condition of the patient was not improved, he gradually got worse and finally exhibited symptoms of inflammation in the corresponding lung, from which blood and pus was expectorated, and he died May 3, three weeks after the extirpation.

The kidney, which was removed one year after the original injury, presents the following appearance: It is divided into two portions, an upper and larger, and a lower and smaller one, with a transverse place of division in which there is an opening through, which leads into the portion of the pelvis belonging to the lower portion of the kidney; otherwise the tissue of the kidney is normal. When the pelvis was opened it was found that the lower portion of the kidney was excluded from the pelvis by the transverse mass of cicatricial tissue seen in the specimen. I therefore think it likely that the urine contained in this space was from the lower portion.

The autopsy showed an abscess cavity in a portion of the kidney, extending to the lower surface of the liver, in the right lobe of which was an abscess the size of a hen's egg, communicating with a subdiaphragmatic collection of pus between the convexity of the right lobe and the diaphragm. From the latter abscess cavity a communication existed through an opening in the diaphragm, up into the pleural cavity, in the lower half of which was an empyema which had perforated into the lung tissue, and emptied into a large bronchus of the lower lobe.

I wish to make a few remarks on the class of cases to which this specimen belongs, namely: subcutaneous ruptures or injuries to the kidney.

One hundred and eight cases of subcutaneous injury to the kidney have been collected lately by Grawitz.¹ Of these 108 cases we can judge of the severity of the lesion by the fact that fifty died. As to the etiology, we can distinguish between direct and indirect injury to the kidney. The direct injury is by a blow, by a foreign body, falling against a sharp edge, as a rail on a railroad track, being driven over by a wagon wheel, the kick of a horse, a heavy body falling against the side of the patient, etc. The direction of the body

¹Langenbeck's Archiv. für Klinische Chirurgie, Band xxxi, p. 419

that causes the injury is not necessarily directly over the kidney; it may strike the anterior surface of the abdomen or either loin, as well as the side. Indirect injuries, which are also known as ruptures, may be an injury to the whole body, for instance a man falling from a great height or from a horse to the level of the ground, not striking against any portion of the body in particular. This was true in this case, where the boy fell 5 feet down on the level ground. Also when a laboring man digging a well is buried by the caving in of the earth, the same thing is shown. Such injuries, acting diffusely on the abdomen, do not cause local symptoms, ecchymoses, abrasions, etc., but sometimes fractures of the lower ribs or of the spinous processes of the vertebræ point to a severe injury.

As to frequency, Grawitz remarks that it is probable that subcutaneous injuries to the kidneys are more common than is usually believed, and much more common than these 108 cases would imply, inasmuch as there undoubtedly are a number of cases where the hæmaturia is slight, passing off in a week, and so they are not recognized or published.

As to the anatomy, direct violence can of course crush the kidney tissue; a slight injury may cause a rupture which is limited to the tissue of the kidney without opening either into the pelvis or capsule, or it may open into the pelvis and capsule, or may rupture also the peritoneal covering of the kidney, or finally, the whole kidney may be crushed. The slighter injuries almost always present themselves, as in this case, as ruptures, and the direction of the rupture is almost always the same as in this case, transverse, so that the kidney is divided into an upper and lower portion transversely, whatever the direction of the body causing the injury may have been. This has its explanation, says Grawitz, probably in the fact, first, in the foetal shape of the kidney, consisting of numerous small lobuli, twelve to fifteen in number, *renculi*, as they are called, divided from one another by transverse sulci. It has been shown by Hatayama, in experiments on animals with transverse lobulation of the kidneys, that when a rupture is produced it is a transverse rupture. Attempts to determine this by Grawitz and Caspar Leman, by rupturing the kidney on dead bodies, have not been successful; it seems as though life is necessary to produce rupture of the kidney in that way. The natural consequence of rupture of the tissue is hæmorrhage, and the quantity of blood is of course variable according to the extent of the injury. The larger the vessel the more the extravasation.

The following points should be taken into consideration as to the danger of immediate hæmorrhage: If the capsule is not ruptured, then the blood will dissect away the tissue of the kidney from the inner surface of the capsule and there

will come a time when the tension here becomes extensive enough to stop the hæmorrhage mechanically. If the capsule is ruptured, extensive extravasation in the pararenal tissue may take place and form a hæmatoma that may extend from the diaphragm to the pelvis, but even here there will finally be some tension which will tend to stop further extravasation. When the peritoneum is ruptured over the kidney then the blood has access to the peritoneal cavity, and of course there is no tension that will have a tendency to stop the hæmorrhage, consequently these are the cases in which there is most danger of acute fatal hæmorrhage. In children, rupture of the peritoneum is more common than in older people, partly because the peritoneum is thinner and partly because it is more tense over the surface of the kidney. If the pelvis of the kidney is ruptured then the blood goes down the renal passages and appears in the urine, except where there is a simultaneous rupture of the ureter.

As to the symptoms: pain is almost always present, and this pain is usually so violent that patients are unable to walk or stand. Shock is not particularly characteristic for injury to the kidney, but, when connected with anæmia and followed by collapse, points to severe intraperitoneal hæmorrhage. A tumor is felt only in case of rupture of the capsule and extrusion into the perirenal tissue. Hæmaturia is almost constantly present, rarely entirely absent, but often of short duration only. It is slight in small ruptures, copious in rupture of large vessels of the pelvis, and sometimes intermittent when a coagulum temporarily stops up the ureter. It may be intermittent when the thrombosis that is primarily found in the vessel later disappears, for instance, if it is being washed away with urine; the result of coagulation on its passage down may be renal or vesical colic. The hæmaturia usually lasts from one to two weeks, it is very seldom that it stays as long as the fourth week.

As to the course and termination, the following is known: Fifty-eight cases out of 108 recovered. The course is usually divided into two stages, a non-suppurative primary, and a suppurative secondary stage. It is an error to divide the course of such an injury in this way, inasmuch as a given case does not necessarily pass from one into another; consequently it would be as well to divide them into cases where we have healing by first intention on the one side, and healing by second intention and suppuration on the other side (Grawitz); or to divide them into aseptic and septic cases. Aseptic healing took place in forty-six out of fifty-eight recoveries (Grawitz). In the milder cases the blood disappears, pain ceases and recovery takes place in one to three weeks. In severe cases it took one to three months. Experiments made by Maas on animals to determine the effects of crushing and rupture of the tissues

of the kidney show that aseptic healing is the rule, even when there is extensive crushing of a large portion or all of the kidney, by aseptic atrophy with absorption of the dead tissues and replacement with connective tissue, and compensating subsequent hypertrophy of the other kidney. This takes place in from eight to thirty days, usually. Suppuration took place in seventeen out of the 108 cases, or in ten of the recoveries. The cause of the suppuration of course need not be discussed; it is microbes, pus microbes perhaps, but microbes. This was suspected as far back as in 1869, when Billroth's assistant Menzel, and Simon mentioned it, showing for the first time that healthy urine does not produce suppuration but that decomposing urine does; but they left it uncertain whether it was the ammonia in the decomposed urine or the microbes, which Billroth had then paid considerable attention to, which caused the suppuration. Tillmans states that extensive crushing of the area of the kidney tissue, when no suppuration takes place, causes only a limited parenchymatous inflammation around the dead tissue. Aseptic silk sutures through the kidney tissue do not cause suppuration, but will heal just as well as in any other tissue. A diffuse parenchymatous nephritis from traumatism is rare and has been described in only three cases.

The sources of infection are the blood, the urinary passages and, finally, the abdominal organs. The blood is very rarely a source of secondary infection to crushed tissues mixed with urine. Rinne has shown that putting woollen threads through the kidney tissue, although they cause more mechanical injury than do silk or linen, will heal antiseptically even when pus microbes have been injected into blood-vessels or into the peritoneal cavity before, at the time, or after the threads have been put in, which speaks very strongly for the blood being only occasionally the carrier of the microbes to infect the crushed tissue. The urinary passages, then, are the ones to look to, and of course any previous condition in the shape of gonorrhœa or cystitis, or (what from the history of the numerous cases seems to be well proven, in some of them at least) from catheterization with an unclean catheter after a rupture which has caused coagulation of blood in the bladder, has caused the infection of the injured portion of the kidney. The course of the suppuration is the following: either a perirenal abscess or, what is more grave, suppurative nephritis; multiple abscesses in the kidney tissue, either acute or chronic, the acute being by far the most common.

Death took place in fifty cases out of the 108, a mortality of 46 per cent.; but of these cases there were a number with complicated injuries of the abdominal and thoracic organs, which ought to be excluded from subcutaneous injuries to the kidney; when these have been excluded there remains a mortality of 35 per cent. (Grawitz). The

most common cause of death is immediate hæmorrhage, the patient dies within a couple of hours or within the first day or two; that is, when the pelvis is opened and the large vessels of the kidney ruptured. The rupture of the peritoneum does harm mostly by not giving resistance enough in helping to check the hæmorrhage, inasmuch as blood and urine when aseptic, even in considerable quantities, are, as has been shown by Wagner, readily absorbed from the abdominal cavity. Later continuous hæmorrhage that comes on in the two or three following weeks takes the life of some patients, but only half as many as the primary hæmorrhage (in eight of Grawitz's cases). Then comes the suppuration or sepsis, which is, as has been seen, in the minority; suppurative nephritis, paranephritic abscess, peritonitis, pleuritis by extension of the abscess, or metastatic. Finally, suppression of the urine rarely causes death (in three only of Grawitz's cases), and of course depends upon the condition of the other kidney, either both kidneys being crushed or the remaining kidney being unhealthy.

II. PRIMARY CARCINOMA OF THE KIDNEY.

The patient, J. P. Bakken, a man of 30, came from Red Jacket, Michigan, in April, 1888, and gave the following history: He had always been healthy, and was considered a strong and robust man; worked in a mine. Two years previously, while at work in the mine, he suddenly felt a pain in the region of the kidney and went home, was laid up for some time. A diagnosis was not made, but he had a pain in that side, nothing characteristic that would call anybody's attention to the urine, and finally after some weeks he got on his feet again and concluded to go to his native country, Sweden, for his health. He stayed there, and one day while jumping about eight feet from a rock down to the ground below, suddenly felt a pain in the left lumbar region, and from that time there was blood in the urine. During the whole year there was blood in the urine, sometimes less, sometimes more, often very considerable quantities so as to make him rather anæmic. When he came to me he had lost strength, had not felt able to return to work for some time, and when examined the urine was mixed with blood in rather large quantities. There could be felt enlargement of the kidney, not very distinct, but still distinct enough to make it different from the other side, and, as in all cases of hæmaturia, I looked for pieces of tumor over and over again, and finally found a small shred of tissue showing round, oval and club-shaped cells that made me believe the tumor to be sarcoma. This decided an operation, which was nephrectomy, by the lumbar method. The patient became comatose the day after the operation, and died with symptoms of uræmic coma on the third day. No autopsy permitted.

The kidney shows the following characteristics: There is a round tumor on its anterior surface an inch and a half to two inches in diameter. Its smooth surface is covered by the distended capsule of the kidney. Its posterior surface bulges into the pelvis, the upper part of which is perforated by a sessile, polypoid projection of the tumor. The apex of this projection is rough and jagged from destruction of the mucous membrane, shreds of uncovered tumor-tissue protruding from the surface and being the source of the hæmaturia. A transverse section through the tumor shows irregular cavities in the centre filled with coagulated blood, in one instance so near the surface as to give the sensation of fluctuation. Microscopical examination shows the typical characteristics of carcinoma, with only a slight amount of connective tissue and large alveoli, lined and filled with large round and polymorphous cells; these cells have large round or slightly oval nuclei surrounded by a large granular protoplasm or cell body.

I will say a few words about primary carcinomas of the kidney in connection with this case. Carcinomas as well as sarcomas are usually found at two different periods of life, viz: from 1 to 10, and from 50 to 70 years. Carcinomas are unilateral and most common on the right side. They are more common in men than women, in contradistinction to sarcomas which are more common in women. Heredity is doubtful, but a congenital origin seems to be plausible in the carcinomas of children. Traumatism is not uncommon.

As to the anatomy, there are some points which are new in the literature, and which P. Wagner, in a recent article, has called attention to.² It was usually supposed that carcinomas originated from the epithelial cells of the urinary canals, but a number of carcinomas were found in which the cells did not look like urinary epithelial cells at all, but did look like the large cells in the supra-renal capsule. Then it was demonstrated by Klebs and Grawitz that erratic islands of supra-renal capsule tissue were found in the kidney substance near the capsule. It is therefore likely that many carcinomas having this kind of cells develop from these islands.

Clinically we may distinguish between a more benignant and a more malignant form of carcinomas. The relatively benignant form is of slow growth; may remain stationary for years, has late metastasis or not at all and is always unilateral. The average duration of the disease in adults is from one to two years; one of Wagner's cases lasted seven years and a half. The malignant form is characterized by rapid growth, softness of tissue, early diffusion and early metastasis, is common in children, where in a few months growths of enormous size are formed. Cystic

softening of the centre and hæmorrhage within the tumor is common. Carcinomas often open into the pelvis, as in the case here described causing hæmaturia, but in cases of this kind it is rare that fragments of the tumor are loosened and found in the urine.

The symptoms are naturally similar in carcinoma and sarcoma. The tumor is always found later in the disease, and may attain an enormous size, especially in children. It is often nodular, with fluctuating areas corresponding to cysts or hæmatomas within the tumor. Out of fifty cases, Ebstein found a palpable tumor noted in forty-seven, the symptoms thus being absent in only three cases. Hæmaturia is rather a common symptom; it is natural that there should be blood in the urine as soon as a tumor, carcinoma or sarcoma, opens into the pelvis of the kidney and the covering mucous membrane is destroyed by pressure, atrophy and hæmorrhage. It is quite possible that the presence of urine on the surface of such a tumor makes hæmorrhage more common by washing away clots. In a collection of seventy-five cases of adults with carcinoma, Rohrer found hæmaturia in twenty-three. In fifty cases of children, Leibert found hæmaturia in nineteen. Ebstein, in fifty cases of all ages, found hæmaturia in twenty-four. The origin of the hæmaturia is almost always from the carcinoma when it has perforated into the pelvis or ureter. Rarely, it may come from the other non-carcinomatous kidney. In a case described by Kühn, he found in the pelvis of the right non-carcinomatous kidney a teaspoonful of blood, and a coagulum in the ureter. He believes the hæmorrhage due to over-distension of the glomeoli from over-work of the organ. The hæmaturia is sometimes slight, sometimes profuse. It is usually found in the beginning of the disease, according to Leibert in two-thirds of the cases of hæmaturia, ceases after a while and does not reappear in the later course of the disease.

As to the degree of hæmorrhage: it is rarely so profuse as to prove fatal. It is not uncommon that, as in this case, the hæmorrhage is started by traumatism. Sarcoma is said to be less commonly followed by hæmaturia than is carcinoma. Neumann gives as the cause of this that sarcomas have less tendency to open into the pelvis than carcinomas. Hæmorrhage rarely occurs in the beginning, then ceases, then recurs towards the end; still more rarely does it occur towards the end and not in the beginning. Albuminuria is seen sometimes independent of hæmaturia. The presence of pieces of tumor in the urine is not a very valuable diagnostic sign because they can seldom be found. The mistake that I made here from the cells which I thought to be sarcoma, is one that Rosenstein has pointed out. Small dislodged pieces of surface epithelium from the pelvis of the kidney, with its club-shaped cells, may

² Casuistische Beiträge zur Chirurgie., Deutsche Zeitschrift für Chirurgie, Band 24.

look like and be mistaken for sarcoma. A safer method of diagnosis is to make an exploratory aspiration from within the tumor and get out a little piece of tissue in the hypodermic syringe which will often give a piece large enough for diagnosis. Pain is often absent. When present, besides having its seat in the region of the kidney, it radiates towards the ribs and down the femur. Pain is not only commonly absent, but it is not characteristic of malignant tumors as compared with an inflammatory condition of the same region. The diagnosis between sarcoma and carcinoma is an ideal one, as the treatment is the same. No symptoms exist to make such a diagnosis outside of anatomical means.

As to the treatment by extirpation, it was said by Gross two years ago that the results are so miserable that extirpation of the carcinomatous kidney should be entirely given up. Sarcomas in children should not be extirpated, and the only malignant tumors of the kidney where extirpation should be permitted are sarcomas in adults, especially in women, and more especially in floating kidney. It is possible that when an earlier diagnosis can be made, earlier operation may make the prognosis better. The majority of surgeons, in Germany at least, believe that this will be so. The arguments in favor of operation are that the disease is usually unilateral, both kidneys being diseased in only 10 per cent. of the cases (Wagner), and further that the relatively benignant forms have a slow growth and late metastasis. Rohrer in 115 cases found none in which the peripheral lymph glands were invaded.

The prognosis of extirpation is grave in young children who have slight power of resistance against extensive operations with great loss of blood; the prognosis is also grave when the operation is performed so late that the patient is already cachectic. Gross collected forty-nine cases of nephrectomy for carcinoma or sarcoma: thirty died during or shortly after the operation; of the remaining nineteen, ten died within a few months from continuance of the growth, and six, all of which were cases of carcinoma in adults, lived only from one and a half to five years. The prognosis of the operation was most grave in children: of sixteen children, nine died from the operation, four shortly after, and three were not afterwards heard from.

As to the method of operating: Laparotomy is more dangerous than lumbar extirpation, the respective percentage of mortality being as 64 to 45. Consequently the lumbar operation should be always preferred when the size of the tumor will permit. The longitudinal or oblique incision gives too little space, therefore a T-shaped incision is preferable. Von Bergmann has recently proposed an interior oblique incision, the same as for ligature of the aorta and common iliac, pushing the peritoneum inward from the anterior surface of the tumor.

III. RENAL CALCULUS.

The third specimen is a stone from the pelvis of a kidney. The patient, Mrs. P. æt. 30, from Dakota, had always been healthy with the exception of chronic indigestion for which she had been under medical treatment off and on for years, until a year ago last March, when she noticed intermittent pains in the right side soon followed by a whitish sediment in the urine. She gradually lost strength and flesh, and the attacks of pain, often running down the right leg, became more frequent and more severe.

On admission to Emergency Hospital she looked exceedingly pale and emaciated, a swelling seven inches long and four inches broad was found in the right side of the abdomen, extending from an inch to the right of the umbilicus, outward and backward into the region of the kidney. The tumor was somewhat tender to the touch indistinctly fluctuating and slightly movable, below and separated from the liver. An exploratory puncture in the lumbar region disclosed the presence of stone and brought out pus. Pulse 100; temperature 101°. On January 21, I made nephrotomy by lumbar incision. When the surface of the kidney was reached fluctuation was distinctly felt through a thin layer of kidney tissue. This was divided by Paquelin's cautery, and a pint and a half of fetid pus evacuated. Digital exploration revealed three stones the size of a hazelnut, and a large one two and a half inches long with projections corresponding to the calices of the kidney, slightly movable, but still so firmly imbedded that it was necessary to divide it by crushing. In attempting to remove the pieces it was still found difficult to dislodge the projections into the calices without tearing through the thin layer of cortical tissue. For fear of breaking through the surface of the kidney into the peritoneal cavity, it was found necessary to enlarge the opening on the convex side of the kidney to about an inch and a half so as to bring out the fragments without too dangerous manipulation. The irregular cavity was washed out with boracic acid through two large drainage tubes.

In the course of five weeks the suppuration diminished, temperature became almost normal, the patient improved in general health, and toward the end of April had gained thirty-five pounds in weight. There still remained, however, a purulent discharge through the drainage tube around which the wound had contracted considerably, and there was still some pus in the urine. On the supposition that either the drainage was insufficient or that some portion of the stone still remained, the fistula into the kidney was reopened on May 9. In the cavity, now much contracted, a small amount of gravel was found, and in the upper part of the kidney, an abscess cavity the size of a walnut, apparently not connected

with the pelvis. No stone was found here. Drainage and packing with iodoform gauze. Since that time the discharge has diminished, but a fistula still remains; the urine has become clear, but still contains a small amount of pus.

I shall make no further remarks on the subject of nephrolithotomy as Prof. Billings is going to discuss the subject and exhibit the specimens of a second case, operated upon by me about two weeks ago.

TREATMENT OF ACUTE LOBAR PNEUMONIA.

Read at the Fifth Annual Meeting of the Fifth District Branch of the New York State Medical Association, held in Brooklyn, on May 23, 1889.

BY J. G. TRUAX, M.D.,
OF NEW YORK.

The writer will not detain you very long to-day. His intention is not to give a complete history of the treatment of lobar pneumonia; that can be found in any of the late text-books, but rather to give an account of the particular kind of treatment which has proven to be the most successful in his experience. Before doing this, perhaps it would be well to describe some of the different kinds of pneumonia, only one of which will be considered in this paper, namely: acute lobar or croupous. The signs by which this disease may be recognized are these: Severe chill, pain, prostration and cough, nausea, rise of temperature, fine crepitant râles (not always present), sputum sticky and streaked with blood, albuminuria present in a large proportion of cases—about 50 per cent. Great trouble in breathing, a quickened pulse, sometimes very rapid. There may be very marked dulness on percussion and bronchial breathing. Vocal fremitus increased. When this last condition is present on left side, it is of considerable importance as a diagnostic sign.

The disease for which acute lobar pneumonia is most liable to be mistaken is secondary lobar pneumonia. The last-named disease is more insidious in its beginning. There is less trouble in breathing, chill frequently absent, little or no pain, average temperature not so high. Bronchial breathing and dulness are the most decided symptoms. Expectoration scanty, crisis sooner than in acute lobar pneumonia.

The other varieties of pneumonia need not be described, to name them will be sufficient. They could hardly be mistaken for either of the diseases just mentioned. They are known as bronchial, lobular or catarrhal, embolic lobular or septic, interstitial of heart disease or chronic, hypostatic or lung congestion.

Within the last few months the writer has attended fifty cases of acute lobar pneumonia. The etiology and clinical history he has been able to carefully study in these cases while alive, and to

make autopsies upon the thirteen who died. It will be unnecessary to give a detailed history of each of the fifty cases and the treatment in each particular case. To do so would not be in accordance with the scope or object of this paper, but for purpose of instruction two cases will be taken, A and B, which will represent the conditions requiring the greatest variation in the treatment of acute lobar pneumonia.

A is a patient in middle life, medium size and fairly well nourished. When first seen he gave a history of chill, pain in the chest, prostration and cough; respirations and pulse more frequent than in health, sputum streaked with blood and scanty; temperature 2° or 3° above normal. A physical examination reveals a crepitant râle, some dulness on percussion over lower lobe of either lung, and bronchial breathing. There is no albumen in urine, no delirium, pulse rarely getting above 100. Crisis takes place in from five to ten days. This class of cases comprise about half of all the pneumonic patients that come under the care of the physician. He can give full play to any fancy in the treatment of these patients. They will nearly all recover no matter how treated.

B represents another condition, present in many of those unfortunate enough to be afflicted with this dreaded disease, which, while there is not so much difference shown by a physical examination, the clinical history differs widely, and to conduct to a favorable termination, will require the care and skill of an intelligent physician. Here we find albuminuria and delirium almost always present, temperature rises to 104° or 105° , pulse 120 to 140, great embarrassment of the respiratory circulation and consequently a labored heart action.

Is there anything to be done which will relieve the patient of these aggravated symptoms? The object of this paper is to teach that generally it can be done and many lives saved. The writer has no new theory to advance; his only object is to revive a very old one (with some few modifications), which has generally fallen into disuse; or, more properly speaking, gone out of fashion. Almost all kinds of treatment, other than venesection, have been tried by the writer to relieve the heart, when obstruction to the pulmonary circulation was very great, and death from heart failure imminent, but with no great success. He had lost five patients in succession (all Italians) from this cause, none of whom had more than one lobe of one lung affected, and all having the appearance of being sturdy if not robust men. Not having written a book on any treatment of this disease, the writer did not hesitate about changing his when circumstances seemed to require it. To take from such patients venous blood, thus relieving the right heart, and to some extent lung congestion, appeared to the writer to be rational treatment. Experience has proven it

to be so. The next five patients coming under his care, who seemed to be in great danger of dying from heart failure, were bled. They all recovered, all the aggravated symptoms improving immediately after bleeding. Experience has taught that antifebrin and quinine in small doses after bleeding would control the temperature and pulse for a long time. Given in large doses before venesection in these cases, it produced almost no effect. Hoping that it may prove interesting, the writer will now read a condensed report of the five patients bled. Such portions of the histories only as will show the condition the patients were in at time of bleeding, and the effect of the treatment, have been taken.

Case 1.—Joseph Albindo, æt. 25, born in Italy, married, occupation laborer. Admitted into the hospital March 14, 1:30 P.M. Temp. 105°, pulse 112, resp. 53. Great dyspnoea and painful respiration, face and neck very much congested. Physical examination showed him to have pneumonia of lower lobe of left lung. Patient given 10 grs. of calomel, 20 grs. of quinine and 5 of antifebrin. The medicine apparently having no effect three hours after given, 16 ozs. of blood were taken from right arm. The patient breathed easier at once; he had a slight chill, which was soon checked by stimulants. Temperature fell gradually until next day, when it was 102°. At no time afterwards did it get higher. Discharged cured April 4.

Case 2.—Louis Berlitchio, æt. 45, native of Italy, laborer, married. Admitted March 26. Had been sick three days, was first taken with a chill; at time of admission complained of pain in right chest, and had a cough. Physical examination revealed dulness over lower lobe of right lung and part of middle, bronchophony, crepitant râles and increased vocal fremitus. Temp. 101°, pulse 108, resp. 36. The next morning temp. 103.8; next afternoon temp. 104°. Urine examined; color red, reaction acid, specific gravity 1015, albumen 10 per cent. Patient given sponge bath, quinine and antifebrin. March 28, two days after admission, temp. 104°, pulse 142, resp. 42. Pulse full and bounding, respirations superficial and painful. The median basilic vein of right arm was opened and 16 ozs. of blood taken. Patient was comfortable in the evening. Dyspnoea not so great and the pulse not so rapid. March 29, temp. 104.6°, quickly reduced with 3 grs. of antifebrin. March 30, temp. did not go above 102°. Nothing given to patient but milk. March 31, temp. 103°; given 3 grs. of antifebrin. After this the patient did well and was discharged cured April 12.

Case 3.—Guiseppe Posatti, æt. 28, native of Italy, laborer. Admitted to the hospital July 15, 1888. This patient was not very robust, looked as if he had no blood to spare. Physical examination revealed the signs of pneumonia of lower

lobe of left lung. His temperature was not very high, but there was great dyspnoea and a very rapid pulse. After having been given for twenty-four hours the usual remedies for improving the action of the heart, with little effect, the patient was bled. Owing to his anæmic condition only 11 ozs. of blood were taken. The distressing symptoms passed away at once. Patient made a good recovery, and was discharged cured in less than one month from time of admission. Bleeding was contraindicated in this case by all the rules laid down in recent text-books.

Case 4.—John Matza, æt. 24, native of Italy. Admitted into the hospital February 1, 12:30 P.M. This patient had pneumonia of lower lobe of left lung, and phthisis of upper lobe of right. His temperature went up to 104.6°, pulse 140, and respirations 44. We did not bleed this patient until after stimulants failed to keep up the action of the heart. The heart action had become very weak. Thirteen ozs. of blood were taken from right arm. Patient improved after bleeding. He left the hospital one month and twenty-four days after admission cured of his pneumonia.

Case 5.—John Grady, æt. 31, born in this country, single, laborer. Admitted September 24, 1888. Gave upon examination the physical signs of pneumonia of both lungs. At time of admission patient was suffering from great pain and dyspnoea. Temp. 104°, pulse 118, resp. 40. He was put to bed and given a sponge bath, which reduced slightly the temperature. 6 P.M., three hours after admission, temp. 105°, pulse 136, resp. 46. He was given at this time quinine grs. x, antifebrin grs. iij, poultices applied to chest, milk diet. This treatment continued until September 30, when the following record is found on the history book: "Patient has been delirious all day, had to be constantly watched to prevent him from getting out of bed, is very thirsty, calling for drink all the time. Given over 4 pints of milk during the day. Urine examined shows 20 per cent. albumen. The patient has a full, bounding pulse, there is great dyspnoea. At 3 P.M. 17 ozs. of blood were taken from right arm. Patient seemed weaker afterwards, but the dyspnoea had disappeared and he rested much better through the night. Twenty-four hours after bleeding temp. 101°, pulse 76, resp. 32. Patient made a good recovery and was discharged cured in about four weeks from time of admission."

The writer would suggest the following general rules for the treatment of acute lobar pneumonia: When patient is first seen, unless contraindicated, a brisk cathartic. Should there not be much impairment of the pulmonary circulation or a very high temperature, a liberal milk diet will be sufficient; or, in other words, the treatment should be expectant. When great dyspnoea, high temperature and a rapid, bounding pulse are present, something must be done. To relieve these symptoms

the patient should first be given quinine grs. x, antifebrin grs. iij, every four hours (unless patient improve sooner), until at least 30 grs. of quinine and 9 of antifebrin have been given. If the patient does not improve under this treatment in twenty-four hours, dyspnoea, rapid pulse and high temperature still remaining, venesection should be performed, and enough blood taken to relieve patient.

Experience has led the writer to believe that bleeding will save many patients when all other means would prove futile.

17 E. 127th St., New York City.

HIGHER GRADUATE INSTRUCTION AND SPECIALISM IN MEDICINE.

BY LAWRENCE TURNBULL, M.D., PH.G.,
OF PHILADELPHIA.

Delivered at the Opening of the New Howard Hospital Building, Broad and Catharine Sts., Philadelphia, May 23, 1889.

Is this instruction required? Examine the men who are yearly sent out of our Medical Institutions, all over the country, with their diplomas, and you will find they are sadly deficient in the practical knowledge to fit them to take the lives of the community in their hands.

Proof of this is not wanting: a few questions addressed to them will convince the most sceptical of their utter ignorance of some of the most essential facts, which are always considered requisite to make a correct diagnosis. The extreme awkwardness with which they handle delicate instruments, shows at a glance that they are not familiar with them. A still more positive proof is afforded, by the best men of the class, being willing and anxious to undergo a competitive examination for the Navy, Army, or Hospital appointment, so as to afford them the opportunity of practical instruction, which is of so much value in the profession. How few, alas, are these opportunities to the larger number who apply, and how dishonorable in our schools of medicine to grant diplomas to hosts of graduates who are lacking practical technical education, and still more, manual training; who must enter practice, and find little or no success, drift into something else, or become depressed in mind, at their lack of the requisite knowledge, losing their patients, because unable to make a correct diagnosis and follow it by successful treatment. These men, many of them, poor in pocket, but rich in honorable intentions, feeling their great need, as soon as they are able to save a little money, have to come again to the great centres of medical knowledge for the practical instruction, which they should have acquired before receiving their certificate to practice.

What is wanted in our Medical Schools? There are always young alumni of the various schools,

who having little practice and plenty of time on their hands in a large city, devote themselves to special branches of medicine, and acquire a thorough knowledge of the same in order to teach, and are glad to be connected with their Alma Mater. These men should receive, as an equivalent for their work, the title of Clinical Professors, and in conjunction with some hospital or dispensary service, should teach, a number of months in the year, to limited classes designated by the Faculty.

NUMBER OF LECTURES.

There should be from three to six lectures, clinics or private classes at the same time, and most of our large buildings could be so altered as to provide accommodations for the students. Prior to their coming, it would be of much service to them if they could acquire some knowledge of the living languages, such as French and German, and botany, natural philosophy and zoology.

What the Junior students should do before they come: First. Much time should be given to anatomy, the study of bones, dissecting dead animals and living plants. Second. Demonstrations upon model or manikin, or the dead subject, so as to be able to point out and determine, first, the color, form and size of every organ of the body, and its position in relation to other organs. Third. To attend a certain number of lectures on chemistry, then, to perform all the ordinary simple experiments in chemistry, in the laboratory; testing the purity of drugs, animal fluids, their toxological relations, etc. Fourth. Lectures on Materia Medica, and by handling, smelling, and tasting every article employed in medicine; not only when properly labelled and named, but to determine the name by the form, taste and smell, when only numbered. All of the manipulations in pharmacy and pharmaceutical chemistry in the laboratory. In the summer months, the teacher or clinical professor of materia medica, should form a class for the study of practical medical botany, and describe each specimen and dissect it under the microscope. The assistant professor of chemistry, should teach medical physics, including heat, light, sound, electricity, thermometry, etc.

What the Senior or Graduating Class should do. Pathology.—First, of animals, by handling every organ and dissecting it, and then of men, and the various natural and then abnormal products, and rare forms, by means of models.

Practical Medicine should be taught by lectures on diagnosis and memorizing the chief points of the most ordinary diseases, symptoms, palpation, percussion and auscultation.

Surgery.—First, minor surgery, applying bandages, bleeding, cupping, applying leeches, opening abscesses, vaccination, removing foreign

bodies, making of poultices, applying hot and cold lotions, etc.

Major Surgery. Operations under a clinical assistant, by performing every thing of importance.

Obstetrics.—The care of the woman prior and subsequent to confinement. Mode of arranging the bed in confinement, position, etc. Touch and mode of determining the position of the fœtus. Thorough knowledge of the various positions of the fœtus in utero. Various steps of delivery. Applications and use of catheter, and forceps on the manikin, etc., and attendance upon one to three cases of normal and abnormal labor, with use of forceps and catheter, under care of assistant.

Care of the women after confinement, diseases of the nipple and mammary glands. Also care and treatment of phlebitis and puerperal fever.

Gynecology.—Study of symptoms treatment of amenorrhœa, and dysmenorrhœa, leucorrhœa, and anæmia. Diagnosis of ulceration of uterus, ovarian, fibroid, polypus, and malignant disease, with operations for the same.

Therapeutics.—This is one of the most important subjects in the whole curriculum of study, demanding the most thorough and careful consideration on the part of both teacher and student.

The class should be so arranged, that each individual will be able to study the action of all drugs and medicines on animals and man; first on the animal and then on the man; and every medical school should provide animals for that purpose. Especially should be tested all powerful alkaloids, as atropia, morphia, pilocarpine, aconite, cocaine, etc., and be able to see the antidotes applied. Testing of all the secretions and excretions in various diseases, urine, blood, bile, fæces, etc., so as to tell at a glance if the secretions be normal or abnormal.

The graduating class or post-graduate, wants to receive the opinions, and newest practical ideas of the specialist in mental and nervous diseases; of laryngologists, or throat diseases; ophthalmologists, or eye system; and otologists in diseases of the ear.

He requires instruction in their various methods of the application and manipulation with instruments, use of light, etc., so as to examine every part of the human body, and by a system of exclusion, find out the most obscure disease. These should be supplied with but little extra expense to a graduate in medicine of a three years' graded course.

Another important matter is, careful and systematic training in the administration of anæsthetics:

This should be given to every medical student, as so much depends upon the administrator—in some cases almost more than upon the operator. At how many medical schools are any but the barest attempts made to give instruction in a sys-

tematic manner, on a subject which I venture to think is not the least important in the curriculum?

We now come to the last part of our subject: **Specialism in Medicine.**

Specialism is one of the legitimate developments of medicine, and the great strength which to-day is manifested in special organizations shows how well the founders of this hospital were truly alive to the most progressive ideas. Look at the growth of medical knowledge during the thirty-six years of its existence in this institution. It has become so great that our mind cannot master, much less employ the knowledge in the practice.

As a recent writer so well expresses it: "There are no admirable Crichtons in our art. The genius of a Sydenham would shrink in despair before the immense masses of medical lore accumulated since his day. We read with astonishment of the acquirements of Dr. John Mason Good, who, to the reputation of a polyglot, added that of one of the foremost practitioners of his age. It is universally acknowledged that the men of one idea, those who confine their attention to one thing, be it a business or a science, are the men who succeed, who represent the progress of the age, and whose names posterity will not willingly let die. If we could imagine a physician thrown into a Rip Van Winkle sleep of say but ten years, and then recommence the practice of medicine, he would be astonished at the progress in all branches of the art. He would feel like the mouse which thought his chest was all the world, was astonished when he stood upon the hill and looked out to see what a great world lay beyond him. An oculist once observed with apparent satisfaction that many people no longer consult the family doctor about their eyes, but went at once to the oculist, as they would to a dentist for their teeth. Some regard this custom as objectionable, but it is entirely correct. The oculist will know the most about the eyes, and the doctrine that the patient should first go to a general practitioner, to be by him referred to the specialist, sounds very pretty, but it is unreasonable. Specialists of any standing in large cities are generally about equal in abilities, and the patient is just as likely to make a correct choice as the family physician." (Leffman.)

"Every year, as the physician becomes better educated, is his field of labor enlarged. Some years since the application of the obstetrical forceps was regarded as an operation requiring a consultation; now every recent graduate considers himself capable of performing it. All doctors should be able to prescribe the proper glasses for simple hypermetropia, and apply the uterine dilator in cases where it is indicated. These methods of treatment are supposed to belong especially to the oculist and gynecologist.

What is this extension, however, but an admis-

sion of the advantages of specialism? Why is the use of these instruments advised? Because these applications in the hands of specialists have shown such beneficial results that the general profession dares not overlook them if it would be true to its great trusts. Imitation is the sincerest flattery, and so far as the general practitioner follows the specialist, he unconsciously approves him."

In a recent discussion on this subject, Dr. Edward Jackson expressed some logical views, as follows:

"It has been said that the large number of specialists might be ascribed to the ignorance of the general practitioner. I would state this differently, and call attention to a view of specialism which I think is not sufficiently considered. A young man who has spent a few months in some eye hospital, concludes to take up the specialty of diseases of the eye, and goes into some large town in the interior of the country, where specialism is unheard of. He is consulted by patients who have become blind from glaucoma, losing the precious time when relief was possible, by advice of the best practitioners of the place, they must await the ripening of cataracts that never existed. He will find other cases—for instance, of refractive errors—which have been improperly treated or not treated at all. Cases of this kind will give him reputation with the laity, but will probably make enemies in the profession and raise some outcry against specialism. Now in such a town, the fact is, not the general practitioners are ignorant, but that there are no general practitioners. Those calling themselves general practitioners have been practicing specialism in its commonest form—that is, the form in which the practitioner devotes his attention especially to acute inflammatory diseases, fevers, obstetrics, and one or two other subjects, and ignores very many important branches of medicine. This is the form of specialism that has taken the firmest root and spread most widely; and specialism, so called, is merely the necessary growth of this, and is, to a certain extent, a recuperative reaction. This primary, widespread, and worst form of specialism arises from defective medical education. The crowded college curriculum does not adequately provide for certain departments of medicine which are of as real importance as any to the truly general practitioner."

And it is fair to ask—can a man be an educated physician and yet be ignorant of the use of the ophthalmoscope. Take, for instance, optic neuritis, and cerebellar disease, retinal hæmorrhage and renal mischief, retinal congestion and neuritis in pregnancy, characteristic retina of leukæmia. An examination of the retina might save a life. How many unfortunate might escape a world of drugging, if the practitioner could recognize the effects of astigmatism in the headache, the dizzi-

ness, the inability to work—symptoms so often referred to the stomach—all corrected by suitable glasses!

In the case of otology, let me enumerate some of the blunders I have known to be committed. Polypus has been mistaken for abscess and *vice versa*; the membrane destroyed in attempts to remove a foreign body which was not present; cerumen syringed for heroically, when not a particle of cerumen was there; the *membrana tympani* supposed to be absent and an artificial membrane advised to be worn, when the membrane was intact; ears lost, in, and after scarlatina, from want of treatment by paracentesis; mastoid abscess and periostitis, the result of neglected discharge, which was permitted to exist under the practitioner's advice that to "meddle with a discharge from the ear was dangerous." To those alone who do a large aural practice are the errors known which are fallen into in the simplest cases from a want of as much otological knowledge as one might gain in the extern department of our hospital in a single day. The study of the ear and throat is naturally allied. The naso-pharyngeal tract, so frequently affected simultaneously with the ear, requires special attention at the hands of all those who are anxious to know anything of diseases of the latter. There is no simple instrument to learn the application of, or at least to make one's self proficient in the diagnostic value of, than the laryngoscope.

To treat blindly every case of aphonia, ignorant of its cause and the pathological states which gives rise to it, when we can readily satisfy ourselves of the condition of the larynx with the laryngoscope, partakes strongly of quackery. The distress caused to the patient in using the instrument, and the discomfiture of the surgeon in the attempt, is simply the result of the waste of some little instruction, which would prevent the bungling and awkwardness of an uneducated hand.

In order to properly follow and develop any one of the specialties in medicine, the medical man must have a thorough training and experience as a general practitioner and then gradually devote his mind and body to the special study of one department, which he intends to make his life work.

Now a word or two in regard to our institution. Of the medical men who first acquired fame in this institution and have now passed away, we cannot help noting the names of James Aitken Meigs, distinguished as an Ethnologist and Physiologist, and of Samuel W. Gross, who performed his first important operation in this hospital. Of old residents and physicians who were connected with us and are now practicing their profession with credit to themselves, the public, and our institution, we would mention a few of them as Drs. C. P. Turner, O. H. Allis, Wm. H.

Parrish, C. S. Turnbull and many others. Some misapprehension has occurred in reference to our incurable department that we have placed so prominently on the front of our building.

The Howard was the very first to bring this important subject to the attention of the profession and the public; fortunately at that early period it languished for the want of adequate funds. It prevented us from erecting a large building and bringing together a mass of suffering humanity, who when they entered were never to return into the world well beings, each tending to make the other unhappy and all hopeless. It is well known from experience and experiments that no two consumptive patients, or cases of cancer, can be in the same ward without much discomfort to each and others by their cough and the disagreeable odors common to the incurable department. Hospitals for consumptives and cancer, both in this country and in Europe, have not proved a success. The home, be it ever so humble, of each sick and incurable individual is the best and most happy place, when supplied with the proper medical attendance, food, and now and then a little money to tide over difficulties. It is in this manner, we propose to carry out the incurable infirmary department. When we are able by the generous gift of some friend, we mean to purchase a number of single small houses, to accommodate those who are so unfortunate as to have *no home*. Some of those who hear me, who have the means, may be twice blessed by giving of their abundance to this department.

HYSTERECTOMY FOR LARGE FIBROMYOMA.

BY D. BENJAMIN, M.D.,
SURGEON COOPER HOSPITAL, CAMDEN, N. J.

H. M., æt. 30, living in the southern part of the State, came to me on the 24th of March, 1888, suffering from a large abdominal tumor, which, she stated, her physicians called an ovarian tumor. I obtained the following history: Her mother died of erysipelas; one sister died with cerebro-spinal meningitis. Patient's past condition was stated to have been moderately healthy until last summer, when she commenced to lose flesh; at this time there was noticed a slight enlargement of the abdomen, which was attributed to dropsy.

In October, 1887, she was examined by a physician, who stated that there was a tumor in the left ovarian region, then about the size of a fist. Two months afterwards she was subjected to another examination, and the tumor was found to have increased in size to that of a child's head. No history of any injury to this region could be obtained. Her menstrual flow had been regular,

sometimes profuse, had skipped one month, which she attributed to a cold.

She began to suffer from vomiting and constipation, and occasional abdominal pains. These symptoms had constantly grown worse, until almost every meal was vomited, and constipation became more and more obstinate, so that powerful purgatives had to be administered, but were losing their effect, and symptoms of obstruction were becoming marked.

She had lost fifty pounds on her weight within a few months, but as she had been previously inclined to embonpoint, her emaciation was not extreme. On palpation through the abdominal wall the tumor appeared symmetrical and mobile, did not feel so hard as is common with fibroid tumors, nor so soft as a cyst; was not nodular, felt very much like a pregnant womb in the early part of the ninth month. Fluctuation could not be positively demonstrated. Percussion sound dull, except a small area in each flank.

Vaginal examination showed cervix drawn up, and enlargement in Douglas' pouch about the size of a retroverted womb. Rectal touch gave no additional information, flexible urethral sound passed into os uteri about two inches, taking a forward direction; pregnancy having been eliminated by the examination, a diagnosis of solid, or semi-solid tumor, involving womb, could be made, but the exact relation of the ovaries to this tumor was not clear, and exploratory incision was advised, with a view of ascertaining the exact relation of the tumor to the pelvic organ and the possibility of its removal, with the understanding that any beneficial operation that would seem feasible, should be proceeded with. Accordingly, on the 29th of March, patient was etherized; the usual incision was made in median line, and surface of tumor exposed. Tumor was quite elastic and of a dark, muscular flesh color, and wedged so tightly in the superior straight of the pelvis, that only one ovary could be reached (the left, which was enlarged). Adhesion being slight, the incision was extended upward, with scissors, sufficiently to enable the upper part of the tumor to be reached, which was free, but in contact with the stomach and liver. The incision was then extended upward and downward sufficiently to enable the tumor to be delivered forward through the abdominal incision.

Both ovaries and Fallopian tubes could be easily reached, while the large tumor was held upward out of the abdominal cavity by an assistant. The pedicle could not, at this stage, be thoroughly examined. The right ovary was found crowded down into Douglas' pouch, and was enlarged to about the size of a hen's egg and roughened on the surface.

The right Fallopian tube was also much enlarged; the left Fallopian tube was about double the normal size and adherent. Both ovaries and

both Fallopian tubes were carefully ligated and cut away. The exact relation of the base of the tumor to the womb could now be clearly made out, and it was apparent that room enough could be made above the insertion of the vaginal wall into the cervix to remove the tumor and body of the womb (which was thoroughly uniformly fused), without necessarily wounding ureters, bladder, or other pelvic organ. I then determined to remove the entire tumor and womb, since to return it to the abdominal cavity would have been to have left her in almost as bad a condition as before the operation, with respect to the obstruction and other difficulties which the tumor caused, and at the same time be little less dangerous to the patient's life than complete hysterectomy. I then carried the incision downward as closely to the pelvic bone as the bladder would permit, ligated each of the round ligaments in two places and cut between, applied Koeberle's clamp and cut away the tumor and womb. The stump was at least three inches in diameter. Tumor was about thirty inches in circumference. After all bleeding points had been properly secured, and all clots removed from the abdominal cavity, the bowels and peritoneum were thoroughly washed out by pouring three or four gallon pitcherfuls of warm water into her.

The omentum, which had been lying on a towel, was returned and arranged over the bowels. The pedicle was fixed in the lower angle of the womb and incision closed with silk sutures, at intervals, of less than an half inch. Wound was dressed antiseptically and patient placed in bed.

Temperature, which had been normal previously to the operation, was taken three-quarters of an hour afterwards and found to be $97\frac{1}{2}^{\circ}$; at 4 P.M., $100\frac{4}{5}^{\circ}$. The second day, at 7 P.M., it reached $100\frac{2}{5}^{\circ}$; pulse, 128; breathing, 28. Third day, 7 A.M., temperature, 101° ; 7 P.M., temperature, $101\frac{2}{5}^{\circ}$; pulse, 116; breathing, 24. Fourth day, 7 A.M., temperature, $99\frac{2}{5}^{\circ}$; 7 P.M., $100\frac{3}{5}^{\circ}$. Fifth day, 7 A.M., temperature, $99\frac{2}{5}^{\circ}$. Catheterization stopped on account of cystic irritation. Patient constantly improved without any untoward symptoms, and was discharged in six weeks after the operation. Clamp came off on the twenty-third day. Has not vomited since the operation; has had no pain; all functions are normal. States that it is the first time she has felt well for four or five years. Has returned to her home in the country, with rosy cheeks, full of life, and at this date, May, 1889, is in perfect health. Has not been sick a day since the operation, and is glad that she parted with her womb and ovaries.

In determining the value of the operation of hysterectomy to humanity, it is important that all cases should be reported, as I found the literature on the subject so meagre at the time of the above operation, that reliable data could not

be obtained in this country. The operation had never, so far as I can learn, been performed in New Jersey, but as hysterectomies are becoming more frequent and successful, ample statistics will soon be forthcoming.

AN UNUSUAL IDIOSYNCRASY ATTENDING THE USE OF ERGOT.

BY D. W. PRENTISS, M.D.,

OF WASHINGTON, D. C.

The patient, a brunette 41 years of age, had always been in good health excepting uterine disorders; married twenty-two years, never pregnant. Has had uterine fibroid tumors for eight years. Previous to 1873 had three attacks of pelvic cellulitis. The tumors were discovered in 1881, since which date she has taken ergot almost constantly, either in form of fl. extract or by suppositories, to control the menorrhagia. The fluid extract was given in doses of from 15 drops to a teaspoonful three times a day for eight years. The effect was very decided in controlling the hæmorrhage, the larger dose being used when the hæmorrhage was severe, and the smaller dose in the interval.

The tumors became smaller under its use and the patient's life was rendered more comfortable, but it produced a peculiar effect to which I wish to call attention, never having observed the same before. This was the same whether taken by the mouth or by suppository.

This effect was uniform and very marked, and I have not seen it referred to in the literature of this drug. It was characterized by a peculiar depression of spirits with hysterical phenomena, and was more marked when full doses of the fl. ext. were taken, less marked when using the suppositories of ergotin. After taking ergot for three days she feels like crying all the time; then, on the fourth day, is ill-tempered and displeased with everything and wants to quarrel; will lie in bed and cry all day. All this while her natural disposition is just the opposite—even-tempered and exceptionally pleasant.

The family soon came to recognize this state of mind and respect it accordingly. Husband and servants were careful not to aggravate it, and even the little adopted daughter would say, "Mamma has been taking ergot, don't notice her."

The effect here noticed occurred constantly following the ergot, and was undoubtedly produced by it.

PAINTING FLOORS.—A French writer observes that painting floors with any color containing white lead is injurious, as it renders the wood soft and less capable of wear. Other paints without lead, such as ocher, raw umber, or sienna, are not injurious.

REPORTS FROM HOSPITALS.

SURGICAL CLINICS AT THE WESTERN PENNSYLVANIA HOSPITAL BEFORE THE STUDENTS OF THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

BY PROFESSOR J. B. MURDOCH,

SURGEON TO THE WESTERN PENNSYLVANIA HOSPITAL AND PROFESSOR OF CLINICAL SURGERY IN THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

[Reported by WILL. N. PRINGLE, M.D., a member of the Graduating Class.]

February 16, 1889:

AMPUTATION OF HIP-JOINT.

I have a patient to bring before you to-day who has come here seeking relief from a most grievous condition. He has traveled throughout this and other States in search of relief and hoping to be rid of his malady, but in each and every case to be turned away in despair by surgeon after surgeon telling him that there was no relief for him, and that his case was hopeless. Three years ago this man was a blacksmith and was kicked on the leg by a horse. Soon after a small lump appeared, which grew, at first slowly and hardly perceptibly, later it grew more rapidly, and within the past year it has grown with frightful rapidity, and is now so large as to keep his legs separated and to interfere considerably with his powers of locomotion. I consider this a more than ordinarily sad case. When great men like President Lincoln, President Garfield or Emperor Frederick, are stricken down and death seems inevitable, and the best surgeons of the country take up their post by their dying bed, all the world looks on aghast and cries out that men who will thus stand face to face with death are brave men—and so they are. But men like President Lincoln, President Garfield or Emperor Frederick have climbed the ladder of fame, they have attained the highest position in the gift of the people of their respective countries, they have shone in their greatest glory, they have accomplished their greatest good. Such men as these have generally passed the meridian of life, they are in the decline.

Here is a man not yet 30, comparatively a young man; strong, healthy, robust, recently married and the father of one child; prospects and opportunities for future good just looming up before him, when just in the prime of life he is suddenly stricken down by a disease, probably cancerous in its nature and as deadly in its characters as the assassin's bullet, if allowed to pursue its rapid onward progress. What will be required here it is impossible to tell; the operation is in a manner an exploratory operation—it may involve the removal of an immense tumor or it may involve an amputation at the hip-joint. The pa-

tient is reduced in strength and may not survive the operation long enough to be removed to his bed in the ward. It is with a sense of grave responsibility that I approach this operation. These are the cases that will test your skill, your knowledge and your courage. An operation is, however, the only chance that remains for the patient, and it is a duty which no surgeon should shirk. As I have said, he has consulted many physicians, and their opinions have been various. Some diagnosed abscess, others lymphoma, lipoma, sarcoma, and many other states and conditions. I am of the opinion that it is a sarcoma, or an osteosarcoma. Now sarcomata, as you know, are cancerous in their nature and prone to return, and a very good rule in surgery is that, where sarcoma attacks a bone, the whole bone should be removed.

A few years ago a lady suffering from an osteosarcoma which had attacked the femur just above the knee, applied to me for relief. I amputated the limb at the upper third of the thigh, thinking that at that point I would certainly be in sound tissue. The patient made a good recovery, but after six months the disease returned with all its virulency, and then I wished that I had removed the limb at the hip-joint. I would therefore advise you that, in all cases, where sarcoma attacks a bone, you remove the entire bone; always go to the joint next above the seat of disease. Sarcoma, as regards the form of its cells, is of three varieties, *i. e.*, the round-celled sarcoma, which is the most malignant in its nature; the spindle-celled sarcoma, which next approaches it in malignancy; and the giant-celled sarcoma, which is the least malignant. They are all, however, likely to return after removal, unless they are completely eradicated by a most thorough operation. Inasmuch as this has been diagnosed an abscess by some surgeons, and in the hope that they may be right, I will insert an aspirator needle well into it and see what we may be able to obtain. You remember that the history of this case was that at first it grew slowly but as it grew in age it increased in rapidity, and now has attained a size exceeding that of the foetal head. No fluid can be induced to flow through the aspirator, although the point of the needle is movable and feels as though it was in a cavity. I will therefore prepare to remove the tumor or amputate the limb at the hip-joint, as may be required. I elevate the limb to a right angle to the body and carefully endeavor, by stroking the skin from the toes toward the body, to drive the blood from the limb. I will apply an Esmarch's bandage the entire length of the limb, pass it around the perineum and carry it well up over the crest of the ilium. A roller bandage will serve as a compress to control hæmorrhage from the external iliac, while the other end of the rubber bandage will compress the branches of the internal iliac which have an exit from the pelvis at the great sciatic foramina.

An assistant will make steady traction on the ends of the rubber bandage. This method of controlling hæmorrhage was first introduced by Mr. Lloyd, of Birmingham, England, and has proved a very efficient method.

As I make an incision and pass my finger into the tumor I at once find a cavity with firm walls and filled with blood clots and a soft encephaloid or brain-like substance, which oozes through the wound. I find the limb is excavated or honey-combed almost throughout its entire thickness, the cavity extending across the bone into the outer side of the leg. It also extends upward, involving the capsular ligament and the joint. In view of the fact that the disease has gained such a foothold, and that the destruction of tissue has been so great, no operation can prove of any avail for this man except the amputation of his leg at the hip-joint. In this opinion I am sustained by my colleagues, Drs. McCann, Hamilton and King. Even this, I fear, will be but a respite or prolongation of the man's life, but as it is the physician's province to prolong life, we are justified in making the attempt, however desperate may be the chances. The limb being now removed is not sufficient; all of the diseased tissue remaining in the stump must be dissected out, or a speedy return of the disease would result. In deference to the general opinion we will not trust to torsion, in this case, to control the hæmorrhage, but strong catgut ligatures will be used. All of the hæmorrhage must be controlled before the wound is closed, for fear of hæmorrhage into the wound, causing wound tension. A rather large sized drainage-tube will be inserted and the wound will be closed by silver sutures. The usual antiseptic dressings will be applied and the patient will be at once removed to bed. Stimulants, such as brandy, whisky and ammonia, will be given to him, and he will be surrounded by bottles of hot water, in order to assist reaction. If he does well, which we hope that he will, the dressings will not be disturbed for several days, at which time the drainage-tube will be removed.¹

MEDICAL PROGRESS.

WEIL'S DISEASE.—W. BRODOWSKI and T. DUNIN (*Deutsche Archiv für klin. Med.*, Bd., 43, H. 4 u. 5) say that, although there have already been a number of cases of this affection described, its cause and nature are not well understood. The present case, therefore, deserves especial attention, since it is accompanied by the report of the autopsy. The patient, a strongly built and well

nourished man of 36 years, had been attacked about ten days before with severe headache, and had since suffered with repeated chills, with great pain in the abdomen, constipation, and some sweating. When examined, he exhibited some jaundice and swelling of the feet, a few râles in the lungs, especially on the left side, and a temperature of 100.4° F. and pulse of 96. The liver and spleen were decidedly enlarged, the lymphatic glands of the neck, axilla, elbow and groin were enlarged and tender, and the sternum and long bones also somewhat painful on pressure. The urine contained bile and a small amount of albumin, with numerous hyaline tube-casts. The blood contained a somewhat increased number of leucocytes, but was in other respects normal. After being under observation five days the patient died in collapse, having in the meantime suffered from increasing and very intense pain in the region of the liver, more marked œdema and jaundice, and a greater number of râles in the lungs.

The diagnosis had to be made from enteric fever, acute yellow atrophy, continued malarial fever, and leucæmia. The first was excluded by the absence of roseola and intestinal symptoms, and the presence of enlarged liver and lymphatic glands, and of tenderness of the liver. The second was excluded by the slight degree of icterus and the enlargement of the liver; and the third by the symptoms connected with the liver, kidneys, and lymphatic glands. At first the disease was thought possibly to be a case of subacute leucæmia, but this also was excluded by the state of the blood, and the presence of jaundice and albuminuria. The authors accordingly were of the belief that they had to do with a case of Weil's disease; and described it accordingly as *hepatitis parenchymatosa acuta, nephritis acuta, tumor lienalis acutus, adenitis generalis acuta*.

The principal results of the post-mortem examination were as follows: The lungs were very hyperæmic and œdematous; and in the lower portions there were many thickened portions which felt like spleen, could be easily crushed, and, on section, were of a deep red color. The liver was enlarged and paler than normal. On its surface and section there were numerous irregular spots, the color of yellow clay, which followed the branches of the portal vein. The liver acini were well marked. The spleen was enlarged at least five-fold, dark red, and of almost fluid consistence. The kidneys were twice their natural size, the surface smooth, grey-red, and covered with small white spots. The cortex was twice the natural thickness, and similar white spots were visible. The medullary portion was redder than the cortical, and white spots were visible at the bases of the pyramids. The thoracic and abdominal glands were enlarged, soft, and reddish-grey. The microscopical changes are described in full;

¹ March 9.—This patient lived for three weeks and died suddenly from secondary hæmorrhage. A postmortem examination showed that the carcinoma had extended into the pelvis, and involved the common iliac artery.

the principal ones being as follows : In the thickened portions of the lungs there was an extravasation of blood in the vesicles, and foci of small-celled infiltration in the interstitial tissue, especially along the course of the larger veins. The yellow spots in the liver consisted of a similar cellular infiltration, which was much more abundant in the inter-acinous portion of the connective tissue than in the intra-acinous tissue. The liver cells were in some parts atrophic and compressed, in others swollen. They were cloudy, and many of them tinged with bile. In the kidneys the condition was quite similar; the spots alluded to consisting of cellular infiltration of the interstitial connective tissue, especially in the cortical portion. The epithelial cells were swollen and cloudy. In the spleen there was small hæmorrhagic extravasations, and the small celled infiltration was seen between bundles of connective tissue. The result of a bacteriological examination was practically negative.—*American Journal of the Medical Sciences*, June, 1889.

PULMONARY VENTILATION AND AMPLIFICATION OF THE THORAX UNDER THE INFLUENCE OF GASEOUS INJECTIONS.—BERGEON (*Lyon Méd.*, No. 13, 1889) has again brought forward his "method" under a different theory and for a different purpose. On the ground that carbonic dioxide inserted into the rectum is rapidly absorbed and eliminated by the lungs, and thus *increases the pulmonary ventilation*, he advises this treatment for pulmonary phthisis, reports several cases, and draws conclusions which may be summarized as follows :

1. Gaseous injections furnish a rapid means of increasing the perimeter of a thorax of insufficient size, and this increases the capacity of resistance to the catarrhal affections of the respiratory passages so frequent in those predisposed to pulmonary phthisis.

2. They aid in producing the disappearance of the tubercle bacilli by increasing the vital resistance and the pulmonary ventilation, and by modifying the nidus in a way antagonistic to the development of the microbes.

3. They exert a favorable action even in febrile phthisis; but in order that this action may be salutary and not harmful, it is necessary to comply strictly with the condition that the gas be obtained from a natural mineral water. If an artificial gas is to be associated with this, it is necessary that it be prepared in a condition of absolute purity.—*American Journal of the Medical Sciences*, June, 1889.

THE WALK OF ATAXIC PATIENTS.—DEMAN and QUÉNU have studied the walk of ataxic patients by means of the exact process of photography, and by means of the impressions of the foot upon the soil through a registering dynamometer.

The process is an application of the methods inaugurated by M. Marey for the physiological station. The walk of ataxic patients differs from the normal in characteristic points which photography of the conspicuous parts of the body demonstrates. The bending of the head, the shoulder, the hips, the knee and the ankle obtained photographically, by means of incandescent lamps attached to the joints of patients, are abnormal in a perceptible degree.

The bending of the hip presents an abnormal sinuosity, whilst the foot is lifted. The knee is strongly lifted a little before it is posed, then it is roughly let down simultaneously with the foot, describing at the ankle a sort of circle the last element of which has a retrograde direction. The prints of the registering dynamometer are especially characteristic; instead of presenting two maxima divided by a minimum, they consist of a winding curve ascending gradually into an undulating plateau. In a second type, corresponding to a heavy step of the foot upon the ground, the impression ascends rapidly, but does not remain at its height. The incoördination of the movements of the lower limbs manifests itself chiefly during the period of lifting, in the moment of rest. The leg and thigh extend quickly and simultaneously, thus producing the heavy fall of the heel on the ground.—*La Semaine Médicale*, No. 18, 1889.

TREATMENT OF EMPYEMA BY A VALVULAR TUBE HERMETICALLY SEALED TO THE CHEST.—DR. WM. WILLIAMS, physician to the Royal Southern Hospital, Liverpool, describes in the *British Medical Journal*, of May 18, the principle and mechanism involved in this plan of dealing with empyema. He says :

The principle of the treatment by my valvular tube is the taking away of the atmospheric pressure from the external surface of the lung while the opening in the chest-wall still remains, and so enabling the organ to fulfil its functions and to fill up its side of the chest from the first, without waiting for any falling in of the side to take place; in other words, to cause the lung to expand at the commencement instead of at the end of the treatment.

The method of carrying out this principle is the following : A rubber tube a yard and a half in length, and of a thickness that will admit of its being introduced through a cannula of the ordinary size used to open empyemas, is taken, and one end is introduced into the chest by this means; over the tube, starting from the free end, is next run up an oval, slightly-curved—concave towards the chest—metal plate or shield, three inches by two inches, having a metal tube half an inch long soldered in a hole in its centre, and projecting on the convex side only; through this the drainage tube passes as the shield is run up

to the chest, and they should, of course, fit each other air-tight. Now, between the plate and the chest stiff ointment on dressing, or a layer of soft rubber sheeting, or what not, is placed so as to form an air-tight joint, when the whole is finally firmly strapped down and bandaged. Turning again to the free end of the drainage-tube. We fix on to it by means of a piece of glass tubing a valve that opens outwards, and the contrivance is complete. The valve end of the tube when in use is placed in a bottle containing some antiseptic solution, as the valve acts best in a liquid, and the bottle forms a convenient and cleanly method of dealing with the discharge of pus. Lastly, once or twice each day the valve is removed and the chest washed out by simply elevating and lowering the bottle and changing its contents. It is essential that this should be done often at first, to thin the pus, which is then frequently very thick, presenting while in that state greater difficulties to its expulsion through the valve than when more fluid, and no obstacle should on any account be allowed to cause a postponement of the application of the valve for a single day.

By means of this mechanism the side of the chest acted upon is converted into the cylinder of a pump, of which the diaphragm forms the piston, having two exit openings, trachea and rubber tube, but only one inlet opening, trachea alone; therefore, each time the diaphragm ascends, the contents of the lung and also that of the pleural cavity are expelled; but each time the diaphragm descends only air into the lung can enter the chest; so each quantity of pus that is driven out through the tube during expiration is replaced at the next inspiration by so much re-expanded lung. By a repetition of this action the pleural cavity is ultimately pumped dry, and so the lung is made to reoccupy it; the action is, in fact, that of a continuous aspirator, and that it actually does take place is, I think, without doubt.

ON THE EFFECT OF CORONILLIN UPON THE HEART.—Coronillin acts electively upon the heart. In doses of 0.005 gr. it acts much like digitalis upon the heart of frogs. In mammiferous animals (dogs) the heart's action is first accelerated, afterwards much slackened. But this phase of slackening is completely suppressed by previous section of the two pneumogastriacs, or the medulla, or by atropinization. In these conditions only an increase of the intra-arterial pressure is observed consecutive upon every injection of 0.0005, or 0.001 gr., after which always a marked and persistent diminution follows. The animal dies from stoppage of the heart. But at the last period of intoxication the cardiac contractions become unable to maintain the intra-arterial pressure, so that this sinks down to nothing before the heart is

completely stopped. M. Gley, who made these experiments, together with M. Schlagdenhauffen, of Nancy, found also that the nerves of the heart presented different grades of irritability under the influence of coronillin.—*La Semaine Médicale*, No. 17, 1889.

THE TREATMENT OF DIARRHŒA IN PHTHISIS.—DR. POLYÁK, of Görbersdorf, gives in the *Orvosi Hetilap*, the results of some trials he has made of two recently suggested remedies in the diarrhœa of phthisis—viz., silicate of magnesia in the form of talc, which has been recommended by Debove, and lactic acid recommended by Drs. Sézary and Aune. About 8 ounces of talc were well shaken up in a pint of milk, and this, or even a larger quantity was given daily. As a rule it arrested the diarrhœa after having been used for a couple of days, but if it was left off the diarrhœa returned. It was found, however, that patients liked the milk mixed with talc even better than ordinary milk, but it could not be taken for more than six or seven days, as after that time complaint was made of a troublesome feeling of oppression in the stomach and bowels. Dr. Polyák thinks it quite impossible that long-continued use of talc can heal intestinal ulcers. Lactic acid proved in his hands a much more satisfactory remedy. The initial dose employed was 30 grains per diem in four ounces of water; this was increased subsequently, but not more than 75 grains per diem were given. On the third day the diarrhœa and pain were generally arrested, and during the next day or two the stools assumed their ordinary character. It was found advisable to continue to give small doses for some time longer. The patients bore the treatment well; it produced no diminution of appetite, and unless continued for a long time, gave rise to no disagreeable symptoms. Dr. Polyák thinks it possible that even ulcers of the intestines may be healed by this means.—*Lancet*, May 18, 1889.

CONGENITAL ABSENCE OF FIBULÆ.—MR. WM. THOMAS, at the March meeting of the Midland Medical Society, exhibited a child æt 4, in whom there was congenital absence of both fibulæ and corresponding parts of feet—viz., the outer two metatarsal bones and phalanges. The feet were in a condition of rigid talipes valgus. He intended to divide the tendo Achillis, and by a specially constructed apparatus to supply the function of the absent fibula.—*Lancet*, May 4, 1889.

FROMENTINE.—DR. DUJARDIN-BEAUMETZ has brought to the notice of the Paris Academy of Medicine a new alimentary substance which he names "fromentine." It contains three times more nitrogenous substance than meal, and a large proportion of sugar. It is obtained from wheat.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 63 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JUNE 29, 1889.

THE TWELFTH VOLUME COMPLETED.

With this issue the twelfth volume of THE JOURNAL will be completed. For thirty-four years the "Transactions of the American Medical Association" had been compiled and published annually in as many single volumes. The delay incident to the preparation of such a work rendered it necessary often to defer its publication, until nearly the close of the current year. To obviate this delay, as far as possible, it was determined after careful consideration, to issue the proceedings of the Association, with its papers and discussions, in the form of a weekly journal, to which should be added such other original matter, together with notes of Medical Progress, Editorials, Foreign and Domestic Correspondence, Proceedings of Medical Societies, Reviews of Books, Editorial Notes and Medical Miscellanies, such as should make it in every respect a first-class medical magazine. Each member of the American Medical Association is entitled to THE JOURNAL by reason of the payment of his annual dues, without further cost. Thus, there was an assured subscription list as large as the membership of the Association. The advertising public was quick to perceive the value of THE JOURNAL as a medium of communication with a very large number of the most prominent physicians in the country, and the revenue from this source, in addition to the membership fees, has enabled the Trustees to present to its readers a weekly journal, each issue, as now enlarged, containing thirty-six pages of double column, solid reading matter.

Two volumes are published annually. The first commencing with the first day of July, the second with the first day of January. At the close of the sixth year THE JOURNAL now completes its twelfth volume, and enters upon a new year entirely free from debt, with every prospect of abundant success.

Ample provision is made for editorial work, a good list of both Foreign and Domestic correspondents has been secured. It has always at hand an abundant supply of original matter, and commands for publication the proceedings of as many of the leading medical societies of the country as its space will permit.

It is the purpose of the Trustees to make it, in every respect, thoroughly representative, as a National Journal. In no sense will it be partisan or sectional. It invites to its columns the discussion of the living issues of the day, which have for their object the promotion of medical science and the advancement of the healing art. It therefore commends itself strongly to the patronage of medical men who are not members of the Association as a journal replete with original research, and with the expression of the latest thought of many of the best minds in our country.

As an advertising medium it is unnecessary to speak. Experience in the past indicates that its value is fully appreciated.

The number of papers presented, and their authorship, give promise that the Annual Meeting held at Newport during the past week has afforded material for the thirteenth volume, which will render it more valuable, than any which have preceded. *It is a good time to subscribe for THE JOURNAL.*

THE PREVENTION OF PUERPERAL FEVER.

Since the "germ theory" came to be so largely accepted by the profession as an established fact, the study of the septic condition known as "puerperal fever" has been greatly simplified, and its prevention has been made more than possible. Fortunately, this disease has been growing more and more rare during the last quarter of a century, and especially since the principles of Listerism have become firmly established in the minds of the profession. So-called epidemics of the disease have been rare, if indeed not entirely wanting, throughout the entire Mississippi Valley, and

where any number of cases have occurred in close proximity of time and locality, a common medium of infection has been easily made apparent by careful inquiry and investigation. Atmospheric conditions are no longer considered to be important factors in the production of puerperal fever, further than that they at times conspire to lower the standard of vital activity in the economy of the subject, and so prepare a suitable soil for the reception of any infective plant that may be introduced from whatever source. The puerperal woman is frequently the subject of various febriculæ accompanied by chills and other alarming symptoms, not in any way due to septic influences in the true sense of that term, and which promptly yield to the appropriate therapy, and which are not to be confounded with the phenomena known as puerperal fever proper.

Puerperal fever or puerperal septicæmia, however, does occur, and occurs too often, as it is a settled fact, in large measure, that this is a preventable disease; that the immediate environments of the lying-in woman are the sources from which her dangers arise, and that directly in proportion as these dangers are met and removed, is her immunity from the disease assured.

The large amount of decaying tissue, the denuded condition of the entire intra-uterine surface, and the gaping mouths of its sinuses, incident to the puerperal state, all conspire to make this an inviting field for the planting and culture of infective germs. When once introduced into this extremely fertile soil and well established throughout the field, the progress of the disease is readily understood. The two processes by which the work of involution is accomplished, that is, sloughing and absorption, must occur in close proximity. The two flowing streams must originate at distances from each other unappreciable, and it is not difficult to understand how the infective germ finds its way into the general circulatory system. This seems plainly to be the story of the disease. The route by which the disease-producing germ may have reached the cavity of the uterus, is doubtless by way of the vaginal tract, and hence is suggestive of preventive measures to be employed. There seems at present to be no doubt entertained as to the practicability of preventing this formidable disease, which a few years ago left so many homes wifeless and motherless. The means to be employed are simple enough, but ex-

acting in every detail. Absolute and uncompromising antisepsis is the only safeguard of the lying-in woman, and the accoucheur of to-day, with present information on the subject at hand, is derelict of duty who leaves any one of the many details of antisepsis unobserved, and it may safely be predicted that, in the near future, he will not have been sustained by the profession who may have inadvertently neglected the recognized precautions to the injury of his patient.

EDITORIAL NOTES.

HOME.

THE JOHNSTOWN SUFFERERS.—The *Maryland Medical Journal* has opened a subscription list for the relief of those physicians and their families who are sufferers from the flood. Up to the 15th inst. \$181.00 had been received.

WE regret to learn of the continued illness of Dr. Oscar J. Coskery, of Baltimore, who has been removed to St. Joseph Hospital.

DR. GEORGE H. MAKUEN, of the Staff of Cooper Hospital, Camden, N. J., has been appointed assistant demonstrator of anatomy in the Jefferson Medical College.

THE AMERICAN INTERNATIONAL CONGRESS OF MEDICAL JURISPRUDENCE held a convention in New York from June 4 to 7. Delegates were present from England, Canada, Russia, Italy, and from nearly every State in the Union. A full report of the proceedings will be found in *The Medico-Legal Journal* for July.

PROF. DAVID SWING, of Chicago, has been elected a trustee of the Northwestern University.

A NEW HOSPITAL.—A public hospital will shortly be erected at Memphis, Tenn., under the auspices of St. Mary's Catholic Church. It will be entirely non-sectarian, and nursing and attendance will be gratuitous to all patients unable to pay.

A TEST FOR ANTIPYRIN.—The *Pharmaceutical Journal* gives the following test for antipyrin: Place in a test-tube a few grains of potassium nitrate, add a little water and then excess of strong sulphuric acid, and fill up the tube with the suspected liquid. A green coloration is immediately produced if antipyrin be present. This test is delicate and reliable and has the ad-

vantage of being specifically characteristic of antipyrin.

PROF. R. BARTHOLOW recommends bromide of lithium to be about the best remedy for muscular rheumatism.

THE people of New Orleans are determined to do away with the system of surface drainage so long in use. They are agitating for underground drainage.

THE Senate of Massachusetts threw out the proposed medical bill on a vote of five to eighteen after it had passed the lower House.

THE BROOKLYN EYE AND EAR HOSPITAL is the recipient of \$5,000 under the will of the late Hon. S. B. Chittenden.

A HOSPITAL FOR DARTMOUTH.—The *New York Times* says, that Mr. Hiram Hitchcock, of the Fifth Avenue Hotel, has given to Dartmouth College a hospital which is to be attached to the medical school of that institution.

THE NEW EDITOR OF THE "MEDICAL NEWS." The proprietors of the *Medical News*, of Philadelphia, have secured the services of Dr. Hobart A. Hare, as editor. Dr. Hare, in conjunction with Dr. Edward Martin, has been awarded the Warner Prize of \$500, offered by the Massachusetts General Hospital, for the best essay on the treatment of persons apparently dead from failure of respiration.

THE NEWPORT MEETING.—The President's Address and a full report of the general sessions will appear in our next issue, which will be mailed early in the coming week. There were about three hundred papers read in the various Sections, which will be published in THE JOURNAL. Now is the time to subscribe, or to become a member by application.

DR. F. H. REHWINKLE, of Chillicothe, O., died on the 7th inst. from the effects of a stroke of paralysis. An extended notice will appear under the head of "Necrology."

DR. S. EDWIN SOLLY, of Colorado Springs, Colo., paid us a visit on his way to the meetings of the American Climatological and American Medical Associations. After the meeting at Newport Dr. Solly will sail for Europe.

FOREIGN.

DANGERS OF FOREIGN TRAVEL.—We learn

through the *British Medical Journal*, that Sir Edward Watkin is energetically calling attention to the lamentable sanitary defects in one of the great hotels at Cannes, to which he has attributed the recent illness of several members of his family. A thorough inspection of foreign hotels is advocated. It is a fact that on both Continents the same cause of complaint exists at health resorts. The sanitary laws should be enforced, and if necessary, special legislation obtained to make the greed of hotel proprietors subservient to the public welfare.

A BRAVE SURGEON.—Mr. C. D'Alton, surgeon of the "Cotopaxi" of the Pacific steamship line, distinguished himself recently by his courageous conduct in rescuing two passengers. The vessel struck a rock in the Straits of Magellan and foundered. During the eight minutes of awful suspense Mr. D'Alton noticed that two passengers were paralyzed and unable to help themselves, and acting with promptness and presence of mind he rescued them, even procuring bedding from his own cabin for the use of the worst of the two cases.

LEPROSY IN ENGLAND.—The Royal College of Physicians are urging the British Government to renew the investigation of the question of the contagion of leprosy. The disease is believed to be contagious and not hereditary.

PAINLESS EXTRACTION OF TEETH.—Drs. Henoque and Fredel, in a communication made to the Biological Society of Paris, state that the extraction of a tooth may be rendered painless by spraying the neighborhood of the external ear with ether. The anæsthesia of the trigeminus so produced extends to the dental nerves, and thus renders the production of general anæsthesia needless.

DR. JOHN GUIERAS, of the U. S. Marine-Hospital Service, is authority for the statement that the City of Havana has had an annual epidemic of yellow fever for over one hundred years. July, August and September are the fatal months.

DR. JOHN FREIND.—The current number of *The Asclepiad* contains a well-executed portrait of the celebrated medical historian, John Freind. Accompanying it is an interesting sketch of his life as student, practitioner, politician and historian.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting, February 6, 1889.

DR. C. H. A. KLEINSCHMIDT IN THE CHAIR.

DR. J. TABER JOHNSON presented a specimen and history of

SUPRA-VAGINAL HYSTERECTOMY FOR A LARGE UTERINE FIBROID.

I first saw this patient with Dr. Sellhausen. She had a large fibroid tumor of the uterus which she had carried about for fifteen years, but was now confined to her room on account of constant hæmorrhages. She was a spinster, æt. 53; a German who could speak no English, and earned her living as a dressmaker at the rate of 75 cents a day. Upon vaginal examination a polypus was discovered protruding from the external os about the size and length of one's thumb. It was thought, that as hæmorrhages had not in the past been a feature of her case, that this polypus might be the cause of her loss of blood, and its removal was proposed and agreed to at once. Miss H. engaged a private room in Providence Hospital for this purpose. She being an aged virgin it became necessary to administer ether in order to insert a speculum. The removal of this growth did no good. The bleeding continued, and, as the patient was unable to continue her work, and being without means to obtain a living she requested that the tumor itself be removed, if possible. After consultation with her friends and physician it was determined to make the effort, as the poor woman had no other prospect in life than the charity ward of a hospital or the poor-house.

Supra-vaginal hysterectomy was therefore performed. The broad ligaments were tied off on each side, and Keith's clamp applied at the head of the internal os, and the tumor cut away. The pedicle was treated as recommended by Keith and Bantock—a drainage tube put in and the wound closed up to and around the stump which was sewed to the peritoneum. There was no shock and the patient did very well for the next twenty-four hours. She was cheerful and bright, and had very little pain. She passed a normal quantity of urine. The second night after the operation, her temperature jumped up without warning to 104°, and then as rapidly fell, and she went into a collapse from which she could not be aroused. Her temperature the next morning was 95°, and she died at noon on the third day. There was no hæmorrhage and only a very slight peritonitis about the edges of the wound. She seemed to die of what is called secondary shock, or perhaps from the shock of a commencing peritonitis.

She may have been too weak to stand the operation, but Keith, in his little work on "Thirty-eight Cases of Supra-vaginal Hysterectomy," states that some of his most anæmic cases did the best, and strong hopes were entertained of the recovery of this patient. Soft friable patches were found on the inside of the uterus which were probably the seat and cause of her hæmorrhages, and which perhaps might have been removed with temporary benefit with the curette. Hæmorrhages are frequently arrested when this condition is present both with the curette and with cauterizing action of the electrical current. The size and friability of these masses gave rise to the suspicion of malignancy, and I requested Dr. Lamb to examine and report on this point. Perhaps the sudden collapse of the patient was, in a measure, due to the undermining of her constitution by the cancerous process added to her loss of blood.

DR. SWAN M. BURNETT presented a specimen and history of

SARCOMA OF THE CHOROID.

I saw the patient from whom this eye was removed for the first time just two months prior to the enucleation. At that time he was practically blind in that eye (the left), and had been for some time—as to how long he was very uncertain. He was of the opinion, however, that the sight had been failing for some years. There was a total detachment of the retina; tension about normal; probably some perception of light at the lower inner quadrant of the visual field; pupil reacted only concentually. As the other eye was emmetropic, and there was no history of trauma, and the patient was near 60 years old, my suspicions as to an intra-ocular growth was almost a conviction. I advised care in the use of the eyes, and ordered him to report from time to time, and at once upon the appearance of redness or pain, and assuring him, without telling him of my suspicions, that it was the kind of an eye that someday would almost surely require surgical interference. Two weeks ago he reported with some pericorneal injection, and a complaint of severe orbital pain setting in suddenly. There was plus tension; the cornea was hazy with the epithelium raised in places; pupil not dilated. Under cocaine, hot applications and rest, the more acute symptoms subsided. I warned him that on a second outbreak of severe pain operative interference would be necessary at once. I went to New York, hearing from him every day, and finally at the end of the second week since first seeing him I was telegraphed for. I found the usual feature of severe cyclitis, bordering on to panophthalmitis—7+2. Enucleation, under ether, was done at once, the operation being perfectly smooth.

On section of the enucleated eye the following appearances were found:—total detachment of

the retina, a tumor on the inner wall reaching from the optic nerve entrance to beyond the equator, and filling about one-third of the cavity of the globe. The sclera was not ruptured, and the cut surface of the optic nerve seemed, on microscopical inspection, to be healthy.

The tumor shows minute dots of pigmentation, and I am quite sure it will exhibit under the microscope the characters of a *melanotic sarcoma of the choroid*. Intra-ocular tumors are of two varieties—sarcoma of the choroid, rarely or never met with in persons under 12 years of age, and glioma of the retina, never found in those over that age. The important lesson to be learned from this case is, that when there is a detachment of the retina in a person over 50 not affected with myopia, and with no history of trauma, to suspect an intra-ocular tumor, and if the vision is lost, to advise an enucleation at once.

DR. T. C. SMITH asked Dr. Burnett what would be the probability of systemic infection in his case, and also the proportion of cases subsequently infected.

DR. BURNETT: In sarcoma of the choroid where the optic nerve is not involved there is little danger of its involving the orbit, or causing systemic infection. If a microscopic examination showed that the optic nerve was diseased in this case then he would fear a return of the disease in the orbit. In glioma there is generally systemic infection.

DR. BERMANN: Did Dr. Burnett obtain a family history of such tumors?

DR. BURNETT: He had learned that the patient had had two epitheliomatous warts of the cheek and lip, which had been removed by the late Dr. A. Y. P. Garnett, and they had not returned. This was the only history bearing upon malignant growths in this family.

DR. GEORGE WOODRUFF JOHNSON reported the following:

1. SUPERNUMERARY BREAST. 2. FIBROID OF THE VULVA. 3. SARCOMA OF THE FEMALE URETHRA. 4. MELANOTIC SARCOMA OF THE CERVIX UTERI. 5. FIBROUS TUMOR OF THE CERVIX UTERI.

DR. THOMPSON: Dr. G. W. Johnston has spoken of the rarity of pediculated fibroids, but was it not much rarer to find sarcomata pediculated?

DR. G. W. JOHNSTON thought his specimen was a sarcomatous degeneration of a fibroid polypus. As was well known sarcoma could occur in the uterus either as a diffuse degeneration of its lining membrane, or as the so-called fibro sarcoma. In the latter variety the tumor is sometimes intramural, sometimes subperitoneal or submucous, and either of the last two forms may become pediculated.

DR. THOMPSON had never seen a pediculated sarcomatous tumor. Dr. Burnett's case has not been definitely settled. If he should operate upon a tumor which he knew to be sarcomatous in the region of Burnett's he would have the gravest apprehensions as to its return. Sarcomata are often locally as malignant as carcinomata. He had recently operated for sarcoma of the testicle, removing everything to the abdominal ring, but the growth returned and killed the patient. He had operated on others and the sarcomata returned. The tendency of sarcoma is to return; it is different with fibromata.

He had sometime ago removed a well-defined tumor from below the angle of the scapula; the wound healed by first intention; it soon returned; he operated again, cutting the muscle from the ribs; and the wound healed again. In five or six months the tumor had grown to be as large as one's head. He told him to go to the hospital, but he declined. Sometime after that he saw him sitting in front of his house and stopped to inquire about the tumor. He learned that he had been under another's treatment and said he was well. The patient described the tumor as breaking down like clots. He examined him and he was well. Three months after he again examined him, and to his surprise he found him well both locally and constitutionally. He thought this one of the most remarkable cases he had ever seen. In carcinoma such a cure would have been impossible. Sarcomata remain locally malignant for a long time.

He gave the details of another case of enlarged scrotum into which hæmorrhage had taken place, and it had swelled to an enormous size while the man was sitting quietly at his desk. He operated and removed large clots and broken-down tissues which gave it the appearance of malignancy; he removed the entire scrotum of the side upon which the tumor was situated. He had had a number of successful operations upon sarcomatous testicles.

DR. LAMB: There was probably a profuse hæmorrhage in the first case, forming clots which subsequently broke down.

DR. THOMPSON thought it was a solid tumor which had ulcerated. He had removed a cystic tumor from the outer side of the arm of a young man, which looked very black at different points. He thought he took out all of the diseased tissue, but it returned in about six weeks, was very much harder and did not fluctuate. He operated a second time and cured the patient. Some sarcomata do not return when once thoroughly removed.

DR. BERMANN was interested in the case reported as polypoid sarcoma of the urethra. He was dubious of the right of calling it a sarcoma. He has frequently removed polypi from the nose and found that when they had existed for a long

time that they resembled sarcomata. If this is true why should we call polypi of the urethra malignant.

DR. LAMB: In the large tumor on the side and ribs, mentioned by Dr. Thompson, the blood supply was probably cut off, fatty degeneration took place, and the tumor disappeared independent of medicinal treatment.

DR. J. TABER JOHNSON asked Dr. G. W. Johnston how long it had been since he removed the sarcomatous growths and if any had returned. Dr. Johnston had assisted him in removing a sarcoma situated between the vagina and rectum. A microscopical examination proved it to be a melanotic sarcoma of the worst type. As yet there have not been any symptoms of reappearance, but he was not certain that time enough had elapsed to see whether it would return.

DR. G. W. JOHNSTON had seen the urethral case one and a half months after its removal. The wall and tissues were hard and tough, and the urethra had regained but little of its elasticity. His treatment after the removal of the growth was for the purpose of making the wall of the urethra contract. The microscopic diagnosis had been made some time after the removal of the tumor and since then he had not seen this patient. He would not stand sponsor for the diagnosis in these two cases. He did not even suspect malignancy until after he had received the report of Dr. Gray.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York County Medical Association; Dr. T. H. Manley on the Operation for Strangulated Hernia known as the McBurney Method—Appointment of a Committee to confer with the New York Board of Health with a view to securing a more perfect Registration of Births.

At the May meeting of the New York County Medical Association Dr. T. H. Manley read a paper on the *Operation for Strangulated Hernia* by the method which Dr. McBurney recently described before the Academy of Medicine, and in it gave a report of three interesting cases recently operated on by himself at the Harlem Hospital. They were all of indirect inguinal hernia, and the operation was performed with a view not only to relieving the constriction, but also at the same time permanently curing the trouble. In devising this procedure, which enabled the surgeon to secure both these ends by means comparatively simple and infinitely safer than any others yet proposed, he thought there could be no doubt that Dr. McBurney had achieved one of the greatest triumphs of American surgery.

The cardinal points of this operation, which he said were for the most part decidedly original and which, if well understood and skilfully applied, would almost invariably lead to successful results, are, it will be remembered: 1, an open wound—hence no septic infection or purulent infiltration; 2, the incision of the sac; 3, the suturing of the cutaneous and aponeurotic edges of the wound together; and 4, the closing in of the breach by means of cicatricial tissue. The difference in the character of the three cases of Dr. Manley rendered necessary some modifications in their management; but in all there were followed out these fundamental points laid down by Dr. McBurney, whose operation was recommended for every variety of abdominal protrusion.

The first case was that of a male 45 years of age whose hernia, on the left side, had existed as long as he could remember. From time to time the protrusion would disappear spontaneously, though he always wore a truss, and up to the day before he entered the hospital the patient had not noticed it for more than four months. On this day, after unusual straining at stool, the tumor reappeared, larger than ever and unusually tender to the touch. The man himself and his family physician both having failed in reducing it, he was sent to the hospital. At this time there were no signs of strangulation and, as his condition was very good, he refused to submit to an operation, which was strongly urged. Four days after the reappearance of the hernia well-marked symptoms of strangulation showed themselves.

The patient was now eager for the operation and, an anæsthetic having been given, the skin was quickly incised by one stroke of the scalpel carried from a point just over the intestinal opening of the inguinal canal to an inch below the external ring, and then the coverings were divided until the sac was reached; the region of the neck being first sought and the body cut down on later. The sac was found to be an old one and bound down by very firm adhesions, which were separated only with the greatest difficulty. Within the sac was a knuckle of intestine, with a large quantity of effused serum. In performing this operation it is inculcated to leave the spermatic cord alone; but in this case there was no spermatic cord, either within or without the sac. When the canal was opened the cause of all the trouble was found, viz.: an undescended testicle, which was normal in shape, but not much larger than a kidney bean. By making considerable traction it could be readily brought out of the canal, and Dr. Manley considered the fact that the inguinal opening was patent throughout attributable to the defective development; the testicle sometimes slipping down through the ring, and then returning again. This condition had naturally kept the patient in a constant state of danger, and the displaced testicle was also the

cause of the discomfort which he said he had habitually experienced when wearing a truss. After completely opening the canal and removing the testicle, traction was made, and the whole of the protruding portion of the serous sac ligated and cut off. The cutaneous edges were drawn down to the divided edges of the canal, and six sutures put in on each side: after which the open wound was packed with iodoform gauze and the usual antiseptic dressings applied. After the operation the patient never rallied, and death ensued four hours after its completion. This man's life, Dr. Manley said, should have been saved, but it was lost through his refusal to submit to an early operation; the delay resulting in septic infection of the peritoneum and general exhaustion of the system.

The second case was in a male, 29 years of age, who had worn a truss for many years, but discarded it about a year before, when his rupture disappeared. It suddenly returned one day while he was making severe exertion, and several physicians having failed to reduce it, he came to the hospital. As in the preceding case, an immediate operation was advised, but the patient refused, and the tumor, which was very small, remained unreduced in spite of all treatment. The next day there was a marked change for the worse, and locally there was found marked fullness along the cord in the inguinal canal, while the scrotum was distended with an enormous hydrocele and the hernia itself had increased to more than five times its original size. In addition, there was well-marked peritonitis in the region of the sac, with a tendency to rapidly become general, and altogether, septic infection was evidently in full progress.

Under such circumstances the success of any cutting procedure was very doubtful, but an operation was now, of course, the only resort. The great advantage of the McBurney method in cases like this, Dr. Manley said, was that we had a large open wound for free drainage, and an opportunity to remove as occasion required any diseased or contaminated tissue met with. In this case the hernia had no sac. As in the preceding instance, there was an old congenital impediment (though here the testis had descended), and the spermatic cord dangled in the centre of a large pouch. Hence, to carry out the operation according to the method adopted it was necessary either to sacrifice the testicle or make an artificial investment for it. As the latter would render the patient liable to another hernia at an early date; and, moreover, as it was found that the *vas deferens* was reduced to a mere thread and the testis was very imperfectly developed, and therefore probably useless functionally, the organ was removed. In order to secure a continuous sac the unclosed tunica vaginalis had to be dissected off all the way up to its origin at the internal ring. The protrusion

consisted of a small knuckle of intestine with a large mass of discolored and partly gangrenous omentum. The latter was drawn forward until healthy tissue was reached, when it was ligated and cut off; after which the sac was cut off and the wound treated in the usual way. Though Dr. McBurney laid stress upon the importance of keeping the patient in bed for six weeks after the operation, this one (whom Dr. Manley exhibited to the Association), could not be persuaded to keep quiet so long, and left the hospital, perfectly well, on the twenty-ninth day.

The third case was that of a woman 51 years of age. The hernia had existed for fifteen years, and ten days before her admission to the hospital she found that it was impossible to replace it as usual. She also became obstinately constipated, and numerous enemata had no effect in relieving the bowels. On the night of the tenth day symptoms of strangulation set in, and her physician, who had previously exhausted every means to reduce the hernia, advised her to enter the hospital. She was admitted at midnight, and Dr. Manley saw her one hour afterwards, when her condition was exceedingly serious, notwithstanding the fact that, from the moment of her entrance, stimulants had been freely administered and artificial heat assiduously applied.

The operation was commenced as promptly as possible and, on account of the extreme exhaustion of the patient, special effort was made to render it as brief as consistent with thoroughness. When the peritoneum was reached it was found that it had formed a pouch which was firmly adherent to the surrounding parts and, from the thickness and toughness of its walls, undoubtedly an old one. The sac, close to the inner side of which lay the round ligament, was divided in a longitudinal direction, when it was found that the greater part of its contents consisted of omentum which, towards the neck, was very firmly adherent to its serous covering. Immediately under the protruding part was discovered a small knuckle of intestine, of a port wine color, with its peritoneal investment, which had a peculiar granular feel. After the sac had been torn from all its connections with adjacent parts it was opened in the lower portion, which permitted the drawing down of the omentum to a slight extent. This having been done, it was ligated in mass, and the stump returned to the peritoneal cavity. In this case, as in the others, the inguinal canal was opened throughout its whole length.

The last steps of the operation, the sewing together of the skin and aponeurotic structures, and the packing of the wound, presented unusual difficulties in this instance, on account of the extreme amount of adipose tissue in the abdominal walls; but by somewhat modifying the *technique* of the operation these were overcome. Though the patient was quite weak for a few days, all her

other unpleasant results, its use would no doubt tend to keep the wound sweet and shorten the healing process. In ordinary cases, where there was little tension, the catgut ligature was perhaps the most useful; but where there was any resistance, or where it was desirable to retain the parts in apposition for a considerable length of time, silk or strong linen was preferable. For ligating the sac or omentum strong silk only should be used, because it was the most reliable, and if first rendered thoroughly antiseptic, it could be safely buried in the tissues without giving rise to irritation or ulceration.

It was seldom indeed that hæmorrhage would occasion any difficulty in this operation; but in any case where the ordinary resources failed to control the bleeding, or where the two parts of a large divided wound retracted, the temporary transfixion ligature would be found invaluable. Having applied this, one could go on with the operation, leisurely seeking out and securing the bleeding points; when the temporary stitch might be removed.

The only immediate dangers in the operation, other than those which had been considered, were shock and exhaustion. Having given some attention to these subjects, he stated that he would decline to operate only on those who were bordering on the moribund state, especially those in profound shock or deeply narcotized and the very old. In conclusion, Dr. Manley said that while there could be no doubt that the McBurney operation was generally successful, and that it was the easiest of performance, the safest from septic infection, and the least liable to be followed by relapse, of all others, the consummation of this admirable procedure, marking as it did a new era in herniotomy, would not have been possible without the light shed upon abdominal surgery by Marion Sims, and without the discoveries of Pasteur and Lister in bacteriology and antiseptics.

In the discussion which followed the paper Dr. George Huntington, who has assisted Dr. McBurney in a number of his operations at the Roosevelt Hospital, said that as to the approximation of the integument and the deeper structures—the conjoined tendon and the transversalis fascia—it was for the purpose of more readily accomplishing this that Dr. McBurney advocated the passage of lateral tension sutures; and it was found that by the careful adjustment of these tension sutures very satisfactory results were obtained. He said he should be somewhat afraid of leaving so large a wound without any sutures, as suggested by Dr. Manley, in the case of certain very fat subjects, for the reason that, on account of its large size, there would seem to be a probability of the cicatrix resulting being rather weak.

Before the Association adjourned Dr. J. G. Truax made a motion, which was afterwards car-

ried unanimously, that a committee should be appointed by the Chair for the purpose of conferring with the New York Board of Health with a view to securing a more perfect registration of births, than is now made. In the case of the deaths, he said, the registration was complete, because no body could be interred or removed from the city without a written permit from the Health Department; but it was notorious that the registration of births was at present very incomplete.

In seconding the motion, Dr. Alfred L. Carroll said that to judge from the New York vital statistics, as published every week, one would suppose, from the preponderance of the deaths over the births reported, that the population of the city was rapidly diminishing. The simple explanation of this was, that a very considerable proportion of the births were never reported at all; and this was due principally to the fact that nearly 40 per cent. of confinements were not attended by registered physicians or midwives. Some time ago, when he was Secretary of the New York State Board of Health, he had carefully investigated the registration of vital statistics in the principal countries of Europe, and he found that in Great Britain and Germany, where the records of births were very complete, the onus of reporting all births was placed upon the parents, or, in the event of the death of the latter, upon the guardians. Through his efforts the law had now been so amended as to make this the case also throughout the State of New York; but this did not apply to the large cities, like New York, which were governed by their own sanitary codes. At present, therefore, the vital statistics of this city were absolutely worthless.

P. B. P.

MISCELLANY.

THE 75,000 EDITION.—The *Maryland Medical Journal* says: THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION deserves great credit for the enormous extra edition of 75,000, containing among other things a full programme of the next annual meeting at Newport, with a short guide to that beautiful resort, as well as an announcement of all the medical schools of the United States.

THE Examining Board of the Marine-Hospital Service, at their last session examined twenty-seven candidates. The following gentlemen passed: Drs. Groenevald, of Louisiana, Young and Brown, of Virginia, and Stenson, of Maryland.

PHYSICIAN WANTED.—We have received a letter from Mr. T. L. Martin, of Pleasant View, Ind., asking to be placed in communication with a good physician seeking a country location. Any of our readers desirous of making a change should communicate with him.

CORRIGENDA.

In THE JOURNAL of June 8, page 795, appears an article on "Temperament," by Dr. S. Edwin Solly; for "Hellurg," read *Helwig*. In the issue of January 19, 1889, p. 84, for "W. W. Skinner, M.D., of Peoria, Ill.," read W. W. Skinner, M.D., of New York.

INDEX VOLUME XII.

	PAGE.		PAGE.		PAGE.
ABDOMINAL sections, use of hot water in	704	Antipyrin craze, is it harmless?	379	Brain surgery, deeper, by C. L. Dana, M.D.	33
typhus in children	768	in menstrual colic.	20, 274	Breath, poison in	556
A brief review of medical progress in America	739	in parturition and gestation, by E. Stuver, M.D.	140, 340, 485, 628	Breech presentation, by Henry D. Fry, M.D.	51
A brutal murder	811	in treatment of diabetes.	701	Bright's disease, chronic, by E. A. Christian, M.D.	397
Abscess, cerebral, report in a case of, by Rush McNair, M.D.	16	Antiseptic power in salol	807	Brinton, Wm. M., death of	57
hepatic, bursting into the pericardium	628	Apostoli's place in gynecology, by H. R. Bigelow, M.D.	459	Bruen, Edward T., death of	562
Wheelock, M.D.	18	Army Medical Department, changes in 72, 108, 144, 216, 252, 288, 324, 360, 396, 432, 468, 504, 540, 576, 612, 648, 684, 720, 756, 792, 828, 864, 900		Brush, E. F., on the relationship existing between human and bovine tuberculosis	678
traumatic, by Thomas W. Kay, M.D.	232	Ascsites, laparotomy for, by T. A. Ashby, M.D.	163	Bryan, Rose S. W., on the physical treatment of insanity	181
Abscesses, cold, after malaria	880	Ashton, Wm., on ovarian sarcoma.	203	Buckner, J. H., on recurrent fatty cyst of the orbit	236
cold, treatment of	699	Asses' milk for nursing infants	56	Bulkley, L. D., on the etiology and treatment of eczema	60
double ovarian, by J. Price, M.D.	709	Association, work for	56	on the relations between the general practitioner and the specialist	155
Aceton and diacetic acid in the urine, detection of	341	Asthma, treatment of, by N. S. Davis, Jr., M.D.	726	Burn, with serious complications, by Herbert C. Jones, M.D.	265
Acid, alpha-oxy-naphthonic, as an antiseptic	419	Athletes and athletics, by Irving Rosse, M.D.	577	Burns, an application for	53
carbolic, exhalation in diabetes	304	Atrophy of the supercilia, cilia and nails, by R. Tilley, M.D.	40	Burrell, Herbert L., on radical cure of hernia	95
hydriodic, uses in practice, by W. C. Wile, M.D.	116	Atropin as a remedy for shock	631		
hydrochloric, in gastric contents, color reactions for	448			CAFFEINE, citrate, in eclampsia.	378
lactic, in tuberculous diarrhoea	306	BACILLI of cholera and typhus, duration of their vitality in the feces	738	in pulmonary disease	341
phenyl-propionic in phthisis	376	Bacillus of Koch, and its pathological influence	510, 715	Calatraveno, when lactation is defective	198
salicylic, in the treatment of diphtheria	558	tuberculosis, detection of, by Frank Billings, M.D.	443	Calcification of the liver	699
Acids and alkalis, action on digestion	270	Bacteria, for urine of nephritis following scarlet fever	283	Calculi, pancreatic, by J. P. Crawford, M.D.	158
Acupressure, by Simpson's method, is it improved?	213	Bacteriology, its present status, by Geo. Minges, M.D.	298	Calculus, sub-lingualis.	315
Acute general oedema of the lungs	463	Bacterioscopy, as an important criterion for the diagnosis of cerebro-spinal meningitis.	661	Camphorated naphthol	594
Address, annual, by Horace C. White, M.D.	463	Baker, Henry B., on etiology of phthisis	754	Camphor, carbolate of, in phthisis	53
presidential, by L. S. McMurtry, M.D.	757	Barium	684	Cancer, microscopical diagnosis of, by E. M. Shaeffer, M.D.	403
Agriculture, department of, report for 1887, by Frank S. Billings, M.D.	430	Barrow, David, gunshot wound of the abdomen treated by laparotomy	833	of right kidney, discussion of	423
Alcoholism, chronic, morbid anatomy and pathology of	307	Barton, J. M., digital division of the pylorus	799	of the breast, diagnosis and treatment for	598
Allegations of harsh treatment of the insane	668	Basedow's disease, cured by improvement of nose trouble	628	of the breast, duration of life in	662
Allegheny County Medical Society	857	therapy of	593	of the rectum, simulating pelvic cellulitis	614
proceedings of	205	Batten, John M., Should syphilitics marry?	139	Cannabin in Graves' Disease.	664
Amblyopia, alcohol and tobacco, by Kent K. Wheelock, M.D.	292	Beer compared with other alcoholics	125	Cardiac murmurs, disappearance of	842
Ambulances for London	607, 713	Bell, A. N., on malaria as a cause of fever	145	Carnick, Boyd, on remedy for overcrowding in medical profession.	613
Amenorrhoea with convulsions	842	Bell, Clark, on electricity and the death penalty	325	Carpenter, J. G., on acute catarrh of the upper air-passages	514
America, medical progress in	632	Bernardy, Eugene P., biniodide of mercury as an antiseptic	531	Carter, A. N., on elements of practical medicine	107
American Laryngological Association	849, 888	extra-uterine pregnancy	797	Casselberry, W. E., on myxomata nasal.	366
American Medical Association. 164, 237, election of Section officers	811	Beta-naphthol vs. hydro-naphthol, by J. V. Shoemaker, M.D.	654	Casts and cylindroids, origin of, in the urine	592
Fortieth Annual Meeting, 348, 383, 456, 490, 526, 633, 705, 775, shall the Section of obstetrics and diseases of women be abolished?	826	Billings, Frank S., M.D., on swine plague and cholera	430	Catarrh, acute, in upper air-passages 514, Catarrhal inflammation of the upper air-passages	547
American Surgical Association, proceedings of	813	Bismuthi magisterium, in infantile diarrhoea	522	Cattle diseases from smutty corn	12
Ammoniacal fermentation of urine	701	Bladder, reconstruction of	808	Cellulitis, pelvic, pathology and diagnosis of, by E. W. Cushing, M.D.	551
Ammonium chloride or bromide, method of generating neutral fumes for inhalation	446	sensibility of	451	Central nervous system, surgery of	670
Amputations of thigh and leg, by Mordecai Price, M.D.	319	Bleeding in surgical operations, arrest of by new method	73	Cerebral abscess, trephining for	670
mylene, hydrate of, poisoning by	341	Blenorrhoea of the sexual organs, by Ernest Finger, M.D.	505	Champaign Co. Medical Society.	755
Anesthetics in dental practice	350	Bock, A. F., primary sarcoma of the lung	759	Charcol, on suspension in locomotor ataxy	662
Anatomy, practical in the colleges	415	Body temperature, increase of a partial symptom of vis medicatrix natural	664	Charcot, J. M., clinical lectures on diseases of the nervous system	107, 228
Anders, C. M., on senile chorea	638	Bones in old age, changes in	662	Cheaver, D. W., on treatment of hernia	95
Andrews, Edmund, comparative results on lithotomy, litholoxoy, and lithotrixy, in 100 cases of stone	829	Bovee, G. Wesley, on electricity in the treatment of the pelvic organs	505	Chevreaul, M., death of	561
Antifebrile, poisoning by, a case of, by W. R. Allison, M.D.	103	Bradford, I. Newton, on gynecological cases treated with electricity.	132	Chicago Medical College, commencement exercises, 1889	502
Antipyretics and hypnotics	671			Chicago Medical Society.	57
				Chicago Medico-Legal Society, proceedings of, electricity and the death penalty	419
				Chloride of barium in heart disease.	770
				Chlorosis, action of iron in	270
				Chorea, 80 cases of	303

	PAGE.		PAGE.		PAGE.
Chorea minor and polyarthritis rheumatica, and endocarditis.	625	Diet in convalescence of typhoid fever.	305	Fibroid tumors of the uterus, treatment by galvanism, by Franklin H. Martin, M.D.	1
Chorea, senile, case of, by J. M. Anders, M.D.	688	Digestion, action of acids and alkalies in intracellular.	700	Fistula, anal, cured by Dr. Longo.	306
Christian, E. A., on chronic Bright's disease.	397	Digital division of the pylorus, by J. M. Barton, M.D.	799	Fœtal ascites an obstacle to delivery.	642
Christian science, so-called.	91	Digitalis, when indicated.	522	Forceps, a new obstetric.	671
Clavicle, scapula and humerus, excision of.	295	Diphtheria, etiology of, by Samuel N. Nelson, M.D.	478	Fort, J. M., on the influence of maternal impressions on the fœtus in utero.	541
Clevenger, S. V., on spinal concussion.	50	influence of tobacco smoke on.	807	Fracture of leg and thigh.	697
Climatic influence in phthisis.	523	its etiology, propagation and treatment, by J. Lewis Smith, M.D.	532	compound.	698
Clinical atlas of venereal diseases of the skin.	611	suppression of.	164	of the vertebrae.	698
Clinical Society of Maryland, proceedings of.	209	treatment of.	266	Fry, Henry D., case of breech presentation.	51
Clinical teaching, neglect of.	343	Diphtheritic laryngitis, intubation in.	524	Functional disorders of the stomach, management of.	760
Coal-gas poisoning, new blood test for.	594	Disease modified by climatic and local conditions.	666		
Cocaine epilepsy.	769	Diseases of the kidneys, surgical treatment of, by David Newman, M.D.	179	GALEZOWSKI'S ointment in neuralgia.	20
its toxicology and incompatibility.	125, 163, 199	of women, treatise on, by A. J. C. Skene, M.D.	105	Gastric and duodenal ulcers.	721
Colchicine in ocular therapeutics.	489	Drainage bill.	811	disorders, hyperthermic, treatment by naphthol.	752
Cocoonut as a tannicide.	342	Dress, its relations to pelvic diseases.	271	Gastritis, membranacea and diphtheria.	626
Coleman, John S., on mercuric bi-chloride in diphtheria.	254	Drowning, a novel case of.	23	Gastrostomy, forming a sphincter after Gestation, prolonged, by W. H. Murray, M.D.	287
Color blindness and color perception.	607	Duodenal and gastric ulcers, by William Pepper, M.D.	721	Glycerine enemata, in dysentery of children.	607
Coma, diabetic, nature and treatment of.	412	Dunning, L. H., on double uterus and vagina.	361	Glycerine, iodized.	342
Comparative results of lithotomy, litholapaxy and lithotripsy in 100 operations, by Edmund Andrews, M.D.	829	Dutton, John C., death of.	274	Glycosuria, treatment of, by Charles W. Purdy, M.D.	433
Complications following abdominal section, by G. M. Baldy, M.D.	602, 637	ECLAMPSIA, citrate of caffeine in.	378	Goitre, parenchymatous, treated by electro-puncture.	20
Compression with the forceps of the cord when around the neck.	641	Eclampsia, microbes in urine of.	702	Gonorrhœa with purpura rheumatica, by Wm. A. Phillips, M.D.	620
Congress, public misrepresentations of.	22	Eczema, etiology and treatment of, by L. D. Bulkley, M.D.	60	Goodell, Wm.	129
Connecticut State Medical Society.	854	Editorial notes, 23, 24, 56, 57, 92, 128, 129, 166, 201, 202, 238, 239, 274, 275, 310, 311, 347, 348, 381, 382, 383, 417, 418, 454, 455, 456, 489, 490, 525, 526, 561, 562, 597, 633, 668, 705, 774, 812, 813, 847, 883.	918	Good sense and correct law.	741
Constitution of Illinois State Medical Society, proposed changes in.	705	Eiffel tower, scientific uses of.	719	Grant, G. F., in treatment of cleft-palate.	169
Consumption, is there a specific for?	809	Electricity, and the death penalty, by Clark Bell.	325	Grindon, Joseph, on scarlatiniform rashes.	579
Consumptives, the best climate for.	897	in gynecology.	703	Gross, Samuel W., death of.	611
Contagious character and transferability of cancer by inoculation.	806	in the treatment of uterine fibroids, 383, 595, 635.	607	Guaiacol, its uses.	19
Convention, sanitary, at Hastings, Mich.	136	Electric light, influence on the eyes.	607	Gunshot wound of the abdomen treated by laparotomy, by David Barrow, M.D.	833
Convulsions, infantile, by I. N. Love, M.D.	195	Elephantiasis arabum, a case.	410	wounds of the abdomen, laparotomy in.	54
Corns, treatment of.	522	internal treatment of.	233	Gynecological Society of Chicago, 278, 315, 711.	
Cortelyou, P. R., on the management of functional disorders of the stomach.	760	Elliot, Llewellyn, on the diagnosis of pregnancy in the early months.	867	of Boston, proceedings of, 58, 133, 349, 385, 462, 597, 672.	
Cowan, George, on medical legislation.	190	Elliott, George T., on tuberculosis cutis verrucosa.	37	Gynecology, electricity in.	671, 703
Craniotomy for a case of hydrocephalus, by G. Hoffman, M.D.	707	Elmer's physician's hand-book for 1889, 107.	107		
Creolin, a new antiseptic.	198	Empyema, new operation for.	486	HÆMORRHAGE in the new-born, by Otto Trass, M.D.	89
in ophthalmology, by G. O. Purtscher, M.D.	340	Endocarditis, early sign of.	521	Hæmorrhages in salicylism, by L. F. Shaw, M.D.	233
Crepitant râle, significance of.	645	Epicystic surgical fistula for cystoscopic exploration, by John D. S. Davis, M.D.	685	Hæmorrhoids, treated internally by injection.	306
Cresol, salicylate of.	412	its advantages.	687	Hagner, Charles E., on hernia of the parturient uterus.	302
Cushing, E. W., on the pathology and diagnosis of pelvic cellulitis.	551	Ergot, fl. ex., four drachms administered early in labor.	639	Hamilton, John B., on two cases of scalding of the air-passages.	47
H. W., on radical cure of hernia.	93	Erysipelas, and acute lymphangitis, identity of.	737	Handbook of diagnosis and treatment of skin diseases.	611
Cyst, cerebral, by J. F. Peyton, M.D.	88	and puerperal fever, by Robt. T. Wilson, M.D.	618	Hand, Dr. Daniel W., death of.	898
fatty, recurrent in the orbit, by J. N. Buckner, M.D.	256	treatment of.	486	Hands, disinfection of.	53
intraligamentary, recurrent, by W. Goodall, M.D.	129	Erythema nodosum, with eye symptoms.	20	Hartigan, J. F., on epidemic at Enterprise, Fla.	35
of an ovarian tumor, by W. S. Stewart, M.D.	203	Eschscholtzia Californica.	557	Health in Michigan for April, 1889.	684
of blood ligament, by B. F. Baer, M.D.	26	Essay for the Lamb prize.	346	Heart disease, prognosis of.	840
parovarian, removed by W. S. Stewart, M.D.	706	Ether during anesthesia, by H. A. Hare, M.D.	89	strain and weak hearts, by J. J. Levick, M.D.	77
Cystic disease of the kidney diagnosed during life.	879	Etherization, abuses of.	340	Heating and ventilation, by R. Harvey Reed, M.D.	469
Cystitis, chronic, in women, by W. Symington Brown, M.D.	388	Etiology of pulmonary phthisis.	629, 754	Hernia, radical cure of, by Macewen's method.	93
suppositories for.	378	of tetanus.	665	Herpes zoster, caused by arsenic.	642
		Evans, Geo. A., hand-book of historical and geographical physiology.	107	Hervey, J. W., on infanticide.	69
DANGERS from consumptive fellow travelers.	900	Ewell, M. D., on medical jurisprudence, Extra-uterine pregnancy.	797	Hewson, Addinell, on excessive conservatism.	147
Davis, John D. S., on epicystic surgical fistula.	685	Eye symptoms and cerebral localization.	235	Hitchcock, H. O., death of.	92
Davis, N. S., retirement from editorship.	21	FACIAL neuralgia, operations, by Edmund Andrews, M.D.	75	Hoehling, A. A., on phthisis pneumonica and laryngitis chronica.	481
N. S., Jr., on the treatment of asthma.	726	Fæcal fistula of the umbilicus.	20	Hoffman, J., on craniotomy for hydrocephalus.	707
Day, R. H., on salol in typhoid fever, 80, 122.	122	Fairleigh, Robert McClure, death of.	141	Holmes, Bayard, on cultures of bacteria from urine or scarlatinal nephritis.	283
Deformity, congenital, operation for, by K. Stansbury Sutton, M.D.	204	False anæralism mistaken for abscess.	642	Oliver Wendell, and the Boston medical library.	201
De la Rue, Warren, death of.	828	Paradism in the practice of gynecology.	673	Honorarium well merited.	611
Dental fistula on the mammary gland.	339	Ferments, soluble, pathogenic action of in fevers.	517	Hospitals in excess.	272
Dentists who have the degree of M.D.	33	Femoral artery and vein, ligation of, by Hal C. Wyman, M.D.	300	Hot air inhalations in phthisis.	416
Dermatitis, diffuse exfoliation, by Frank Woodbury, M.D.	81, 98	Fever, pneumonic, study of, by Ed. F. Wells, M.D., 187, 258, 332, 439, 582, 802, puerperal, prevention of, by W. W. Jaggard, M.D.	289	Hot water cure.	713
Deventer's method of delivery of the after-coming head.	771	typhoid, during pregnancy, by W. W. Jaggard, M.D.	711	in abdominal sections.	704
Diabetes and its connection with heart disease, by Jacques Mayer, M.D.	574	yellow of 1888.	317, 22	Howard, R. L., death of.	489
experimental.	273, 309	Fevers in children, management of.	109	Hutchinson, Jonathan, on the pedigree of disease.	107
treatment by antipyrin.	701			Hydatid cyst of the orbit.	89
Diabetics, good bread for.	163				
Diaphoresis in syphilis.	878				
Diarrhœa, summer, prevention of, in children.	448				

	PAGE		PAGE		PAGE
Hydrocele of the hernial sac, by Thos M Norton M D	656	Leg anterior curvature of osteotomy for	702	Microorganisms, and their relation to disease, by Samuel N Nelson, M D	730
of the tunica vaginalis, radical cure of	409	Legislative restriction in medical education and practice, by Jno G Perry, M D	337	in the genital channel of the healthy woman	557
of	707	Letter from London, 29, 358, 424, 572, 607, 713	825	Migration of foreign bodies, by D W Beard M D	249
of in pul	664	New York, 31 65, 101, 172, 211, 244, 321, 392, 427, 465, 532, 608, 645 678	922	Minges, George, on the present status of bacteriology	298
Hydrophobia, by William A Welch, M D	600	Moscow, on artificial inoculation of calves	753	Miscellaneous items, 36 179, 215 251, 287	926
Hydroxylamin in skin diseases	484	Paris, 100, 283, 426, 500, 752, 860	642	324 359 395, 430 468, 503 538, 575, 611, 648, 684 719 750 792 827, 863 899	926
Hygiene of the eyes	89	Vienna, Austria	642	Mitchell (Ind) District Medical Society,	753
Hyperemesis gravidarum treatment of	341	Leucoplasmia and chancreoid of the vulvo vaginal member	125	Montgomery Dr , on hysterectomy	62
Hysterectomy, vaginal, by Dr Mont gomery	62	Levick, James J , on heart strain, etc	77	Moribund condition signs of	678
supra vaginal, do	63	L'Hydroxylamin in dermatology	841	Morphine, new antidote for	521
Hysteria minor and ovarian phenomena in a male	808	License to practice, by William Osler, M D	649	Morris John, presidential address, on the pathogenesis of crime	669
		Ligation of splenic artery for cure of hypertrophy of spleen	764	Murdoch, J B, surgical clinics, 588 621	913
Ichthyosis parialis	642	Lindsley, Harvey, of Washington, death of	705	Murmurs in thoracic vessels from effusion of fluid into pleura	879
Ignipuncture of the tonsils	485	Liver, acute yellow, atrophy of by J F Jenkins, M D	620	Muscroft C S , on new method of arresting hemorrhage	73
Illinois State Board of Health	23	calcification of	699	Myrtol, a new disinfectant	341
and the State Legislature	561				
Illinois State Medical Society	416, 684	MCARDLE, T E , on a case of perityphlitis	406	NASAL obstructions, removal of by Drs Reynolds & Lovett	171
Infanticide revelations	55, 69	McCasky, G W , on suppurative peritonitis	224	Naval, Medical Department changes in, 144, 216 252 288, 324, 396 432, 468, 504	900
Infection, secondary in scarlet fever	664	McLean Co Medical Society	720	450, 576, 612 648, 720 756 792, 864,	704
Influence of the different methods of treatment of abdominal typhus in children upon fluctuations of temperature and body weight	768	McLellan, Ely, on treatment of catarrhal inflammations	12	Needed prescription	704
of tobacco smoke on diphtheria	807	McMurtry, L S, letter from London, abdominal surgery in presidential address	572	Needle migration of, by Sarah A Kime, M D	104
Ingersoll, Dr Ellen A, death of	898	McNair, Rush, on case of cerebral abscess	16	Nelson, Samuel N , on etiology of diphtheria	478
Ingrowing toe nails treatment of	485			on microorganisms and their relation to diseases	730
Inoculation anti rabie	71	MALARIA as a cause of fever in the State of New York	145	Nephrectomy, uncompleted	762
Insanity physical treatment of, by Rose S Wright Bryan, M D	181	parasite, and those of febris recurrentis	591	Nephritis, acute	762
puerperal, six cases, by B C Hirst M D	29	Mammary inflammation	161	Nephrography for floating kidney	692
Insomnia of the psychosis, treated with sulphonal	792	Mania and melancholia following gynecological operations	608	Nephrotomy, by L W Steinbach, M D	695
Intestinal stenosis, a case of surgery, by N Senn, M D	574	Manual of instruction, etc by Alvah N Doty M D	574	Nerve grafting	482
Intestine, rupture of	597	Marcy H O a case of hernia	94, 115	Neuralgia and abortion	268
Intestino peritoneal septicaemia	626	Marine Hospital Service	34	Neuralgias and psychoses relations of	542
Intracellular digestion	700	changes in, 72, 180, 324 504 540, 576 756 828,	900	Neuritis, puerperal, due to vomiting in pregnancy	624
Intraglandular cysts, double by Wm Goodall M D	25	new law	56	Night terror, and screaming, cured by removal of tonsils	486
by B C Hirst M D	27	Martin Franklun H on treatment of fibroid tumors of uterus	882	Night sweats	11
Introduction to the study of pneumonic fever, by Edward F Wells M D	869	Massage in gynecological practice	843	Nipple, Paget's disease of	737
Intubation forty two cases of of the larynx	375	Massey G Betton, on electricity in the diseases of women	683	Northampton Co Medical Society, Pa	668
Iodoform poisoning experimental	269	Mastoid process, trephining of	270	North Texas Medical Association	792
Ischium fracture of, by S T Armstrong, M D	269	Maternal impressions, do they affect the foetus in utero?	541	Notices, miscellaneous	108, 142
		Myxomata nasal, by W E Casselberry, M D	366		
		Meacham John G , on needle in the heart	178	OBSTETRICAL Society of Philadelphia, proceedings of, 24, 62 129 167, 203	706
JACKSON, A Reeves, on cases of renewed uterine hemorrhage	278	Measles in Glasgow, causes of the outbreak	607	457, 602 637,	706
Jackson, Henry, on cases of diphtheria	482	Mediastinal abscess trephining in	18	On the management of functional disorders of the stomach by P R Cor telyou M D	760
Jacobson, Nathan, on tumors	41	Medical act of Minnesota, by Perry H Millard	177	Ophthalmoscope	846
Jaggard W W on the prevention of puerperal fever	289	and surgical monographs	719	Orcutt A M, death of	539
Johnson, Joseph Taber pathological specimens	865	bulletin visiting list, by F A Davis, 1889	35	Osler, Wm , on the license to practice on senile chorea	649
Johnstown disaster, an appeal from Dr Irving C Blaisdell	892	education and the laws regulating the practice of medicine in Turkey, by Thos W Kay, M D	793	on neglect of clinical teaching	429
Jones, Herbert C, case of extensive burn with complications	265	education Illinois report on men higher general education for registration in England	453	Osteotomy for anterior curvature of the leg	702
Judd, H , on spinal injuries	284	school and university union	452, 487	Ovarian cyst multilocular	634
		Society of District of Columbia, 61, 135 311, 423 529 634 742, 885	920	multilocular, by Geo Boyd, M D	25
KANSAS Medical Journal	705	Society of New Jersey	722	tumor notes on	744
Kay, Thos W, medical education, and the laws regulating the practice of medicine in Turkey	793	Medication, rectal, new form of	378	Overcrowding in the medical profession	613
Keen, W W on floating kidney uncompleted nephrectomy	692	Medico Chirurgical Faculty of Maryland Society of Maryland, proceedings of	669		
Kelly, H A on carcinoma of the corpus uteri	203	Medio tarsal operation, Milroy s	449	PACKARD John H, case of laparotomy for injury by a circular saw etc	276
Kidney, floating, operation by W W Keen M D	692	Menstruation foetid	230	Pad, a waterproof, for drainage, by G E Shoemaker, M D	251
Klein C H on nasal speculums	357	precocious	842	Papoid, in the treatment of croup by O B Ormsby, M D	251
Knecker in diphtheria	125	Menstrual in pruritic affections	378	Paraldehyde, action of	484
Kuhn Dr, on the dental art in the United States	141	Mercuric bichloride in diphtheria, by J S Coleman, M D	254	Pathogenic action of microbes of the urine of eclamptics	702
		Mercury, biniodide, its antiseptic qualities, by E P Bernardy, M D, 551,	562	Pathogenic germs viability of	200
LAKE County (Ill) Medical Society	899	Mercuric salts	828	Pathological specimens	597
Lambert, Jordan W, death of	59	Microbes of the stomach	417	with accompanying histories by Joseph Taber Johnson, M D	865
Laprotomy, exploratory, by H O Marcy, M D	115			Pearce, H C , on complete removal of uterus and appendages	444
for extra uterine pregnancy in gunshot wounds of the abdomen	696			Norval H , on the bacillus of Koch	510
Larrabee John A on management of fevers in children	109			Pelvic inflammation, treatment of	616
Laryngology and Otology, Section of	705			Pepper, Wm , on duodenal and gastric ulcers	721
Lavage	671			Pericarditis purulent surgical treatment of	18
				Perineum, its anatomy, physiology, and methods of restoration, by H O Marcy, M D	349
				supports during operation, by W C Wile, M D,	231

INDEX.

	PAGE		PAGE		PAGE
etanus acute traumatic	65	Twelfth rib, fracture of	450	Ventilation and heating	469
etiology of	163	Twelfth volume completed	017	Vertigo of the stomach considered of	806
fatal, during enlargement of the	592	Typhus, intestinal, a rare complication in	558		35
stomach				Vulliet Prof, lectures on gynecology	429
text book on medical jurisprudence and toxicology	430	ULCER, duodenal and gastric	721		106
Thallin bougies, medicated, in gonorrhea	413	of the stomach, by Ernest F King, M D	312	WASHING of the organism in intoxication	769
The Cronin assassination	827	Ulcers, cocaine in the treatment of	342	Washington's rule of civility	70
disaster	846	Ulna, entire excision of with resection of humerus and radius	670	Was it a decoy?	773
odor of meat	827	Uncompleted nephrectomy by W W Keen, M D	762	Welch, William H, on hydrophobia	690
75 000 edition	827	Upshur, J N, on medical college of Virginia	68	Wells, Ed F, on pneumonic fever, 187, 258, 332 439 582 802, 869	
Thomas T Gaillard, on myoma and melancholia or sequelæ of gynecological operations	608	Urinary casts, how to preserve them	342	Werder, X O laparotomy in extra uterine pregnancy	696
Thoracic deformity from enlarged tonsils	488	Urine, anomalous fermentation	701	Wheelock Kent K, on case of amblyopia caused by alcohol and tobacco	292
Thoracopagus by D S Lamb M D	118	incontinence of, in children	633	on retro pharyngeal abscess	123
Talley, R, on atrophy of the cilia and the supercilia and nails	40	suppression of, seven days without serious results	638	White Horace C, annual address	463
Times and Register	668	Uterine displacements, their pathology and treatment, by B L Schultze M D	213	Whitlow, abortive treatment of	752
Tobacco smoke as an antiseptic	607	hæmorrhage, by A Reeves Jackson, M D	28	Whitman Royal on Macewen's operation for cure of hernia	93
Tolu balsam impurities of	162	Uterus and appendages complete removal of by H C Pearce M D	444	operation for appendicitis	97
Tonics, cardiac,	234	and vagina, double, by J M DaCosta, M D	602	Wile W C on uses of hydriodic acid	116
Tooth, accidentally swallowed, as a souvenir	57	double, by L H Dunning M D	361	Williams L L, on abscess of liver, recovery	516
Transactions of the 38th Annual Meeting of the Illinois State Medical Society	430	fibroid tumors of, treatment by galvanism by Franklin H Martin, M D	1	Wilson, Robert T, on erysipelas and puerperal fever	618
Treatment of acne	770	parturient, hernia of by Charles E Hagner, M D	302	Wilson, W F death of	597
of oxyuris vermicularis	770			Woodbury, Frank, on diffuse exfoliative dermatitis	81
Tremor, mercurial	413	VACCINATION, by Thomas Linn, M D	648	Woodruff, Chas E, on abnormal sexual development	67
Trephine segment and aseptic, by John B Roberts M D	407	Vaccine chemical, for cholera	627	Wyman Hal C, on ligation of the femoral artery and vein	35
Trephining in fracture of the spine	661	Vagina and uterus double	602	ligation of splenic artery for cure of hypertrophy of spleen	764
Tubal pregnancy, by Dr Noeh	63	Vaginal hysterectomy	744		
Tubercle bacillus, a new process of coloring	879	hysterectomy for cancer by Docent Dr Vaclav Rubesca	805	YEAR book of treatment for 1889	430
Tubercular peritonitis with specimens, Landerer	742	Valgus reflex a case of	253	Yellow fever	633
Tuberculous affections, treatment of, by Landerer	52	Valvular disease of the heart treatment of	486	and its prevention	809
diarrhœa, lactic acid in	306	Venereal and skin diseases clinical atlas of by R W Taylor, M D	178	commission international germ by Dr Freire	23
Tuberculosis cutis verrucosa, by George T Elliott, M D	37				90
from contagion	306				
human and bovine dissection of by Drs Diggs Forrest Grundin and Loomis	678				
Tumors, study of, by Nathan Jacobson M D	41				